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Labour Market Analysis

Saskatchewan Nursing

A report for:

Saskatchewan Health
Saskatchewan Post-Secondary Education and Skills Training

prepared by:
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Sask Trends Monitor

October, 1999

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EXECUTIVE SUMMARY

The main findings from this report are summarized below in point form, in a format similar to the *Interim Findings Report*. A comparison between this summary and the *Interim Finding Report*, prepared in May, will show that some of the data have changed slightly. The main reasons for these changes are as follows.

- An additional year of data from the Canadian Institute for Health Information was published after the *Interim Findings Report* was prepared. This added 1998 to the time series of data and, more importantly, showed that the rate of attrition for Registered Nurses had improved somewhat from 1997. This, in turn, had the effect of lowering estimates for the shortfall between demand for Registered Nurses and supply.

- We learned that most Registered Psychiatric Nurses were not included in the Canadian Institute for Health Information database, at least if they were practising as RPNs. Although some double counting was possible, the decision was made to add administrative data from the Registered Psychiatric Nurses Association of Saskatchewan to those for the RNs. This increased the combined number of practising RNs/RPNs by about 1,000 persons.

- Estimates for the number of new graduates from Saskatchewan post-secondary institutions were refined.

The net effect of these changes was a decline in the projected shortfall between the supply of and demand for RNs/RPNs in Saskatchewan. Excluding new graduates, the shortfall in the interim report ranged from 180 per year in the best case scenario to 430 per year in the worst case scenario. In this report, the range is from 105 per year to 331 per year.

Excluding new graduates, the LPN shortfall in the interim report ranged from 70 per year in the best case scenario to 130 per year in the worst case scenario. In this report, the range is from 64 per year to 129 per year.

Registered Nurses/Registered Psychiatric Nurses

These two categories of nursing are combined here whenever data sources do not distinguish between the two professions.

1. In spite of significant changes to the health care system in Saskatchewan, employment of Registered Nurses has remained relatively constant over the past decade. The stated intention of many health districts to hire more nurses will at least maintain the number of nurses over the short term and, arguably, increase the number.

   The number of RPNs, in contrast, has been declining slowly, from 1,172 in 1994 to 1,112 in 1998.

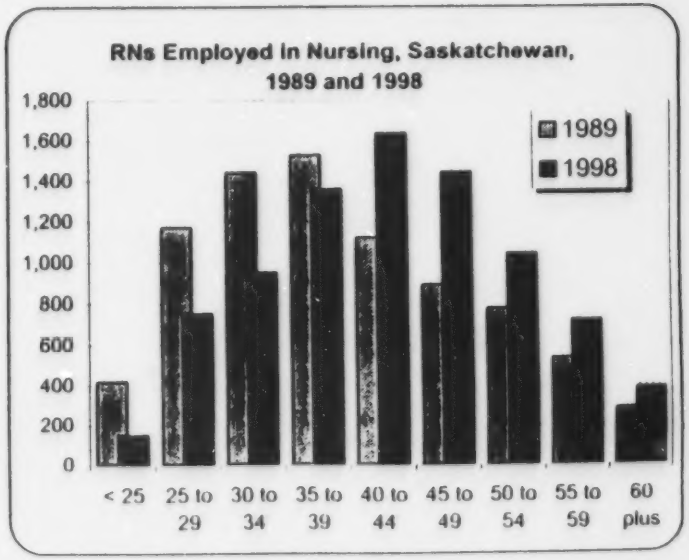
   (Reference: Section 3.1)

2. There are a significant and growing number of RNs in the age groups near or past the age of eligibility for early retirement.

   Relatively few RNs remain in the labour force past the age of 55 and those that do tend to work in occupations not directly involved in patient care; many work outside the health care system.

   RPNs are, on average, slightly younger than RNs although many are also eligible for early retirement.

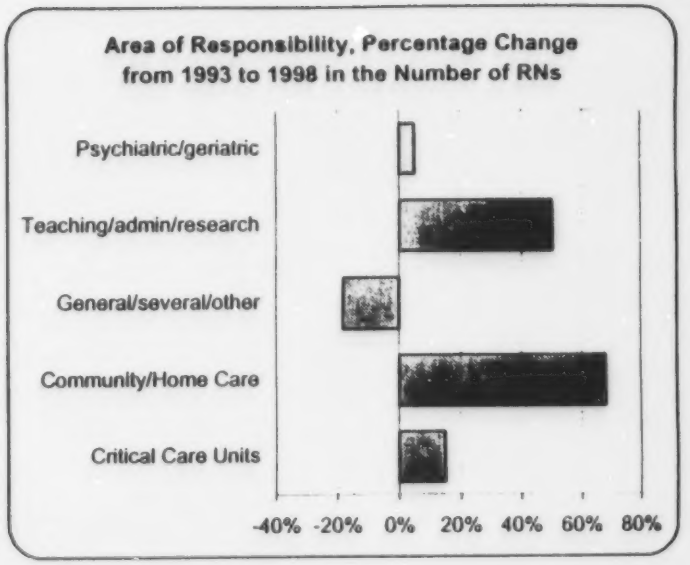
   (Reference: Section 2.4)



3. In the last five years, there have been steady but significant changes in the fields of nursing practised by RNs and in the sector in which they work. In particular, there are a much higher proportion working in research and education and in community health and home care. There are fewer working in other patient care areas such as medical/surgical units, pediatric, and maternal wards. The proportion that work in acute care hospitals has declined from 63% to 54% over the five years from 1993 to 1998 whereas the number working in community and home care services has increased from 8% to 17% over the same period.

   The situation for RPNs is not as definitive. More, in fact, are working in acute care than were doing so a few years ago and more are working as counsellors/therapists.

   (Reference: Section 3.2)

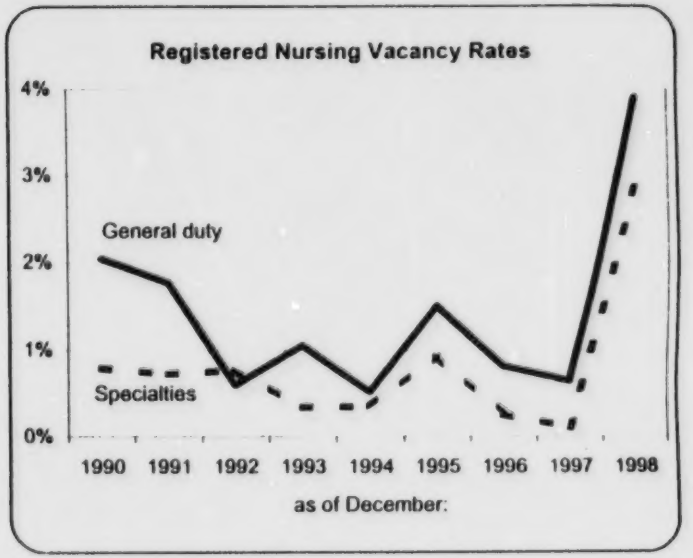


4. There is anecdotal evidence of an increase in overtime among RNs, particularly mandatory overtime. Statistics Canada's payroll survey, however, shows that the overall incidence of overtime in the health and social services sector, although growing, is only slightly above historical levels. In particular, the incidence of paid overtime in Saskatchewan hospitals (among all staff) has been growing slowly but steadily since 1992 but is still below the level it was in 1990.

   (Reference: Section 3.4)

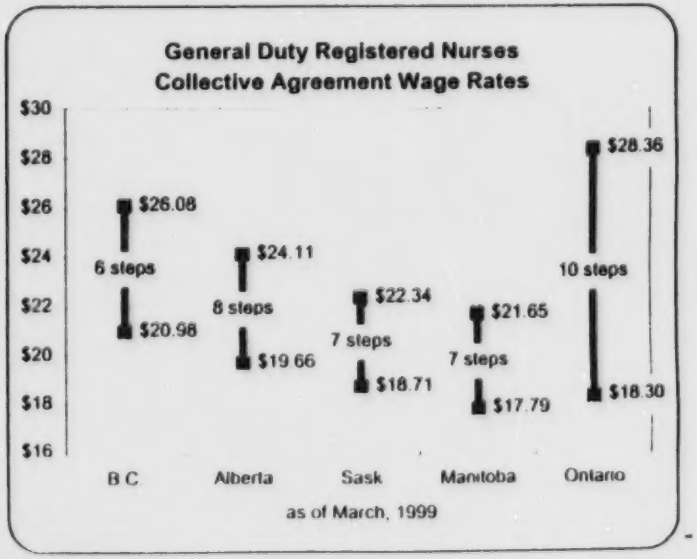
5. Except for the chronic shortage of qualified RNs in Northern Saskatchewan, the difficulty that districts are having in recruiting nurses is a very recent phenomenon. Unfilled nursing positions appear to be concentrated in particular regions (the East Central part of the province including Regina, for example) and particular specialty areas (acute care). A steady decline in the number of Employment Insurance beneficiaries since 1994 confirms the tightness in the labour market.

(Reference: Section 4.1 and 4.2)



6. The incentive offered by higher wage rates in Alberta and other provinces is probably not sufficient to attract registered nurses from Saskatchewan unless they are new graduates or are having difficulty finding work. These rates are subject to change, however, as collective bargaining is occurring across Canada and wage rates are expected to change significantly.

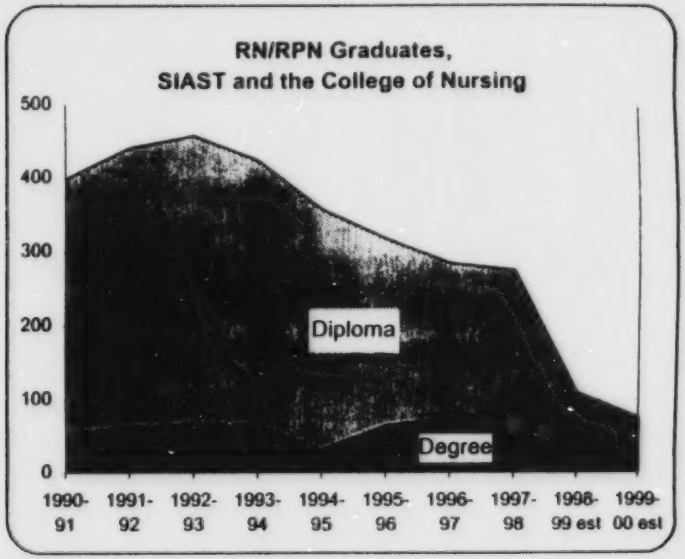
(Reference: Section 3.3)



7. The number of RN/RPN graduates from the Saskatchewan post-secondary institutions has declined significantly since the peak near 450 in 1992-93. The number of degree graduates (excluding those with a diploma who obtain a degree and excluding Masters degrees) has been relatively constant near 60 persons per year over the past ten years while the number of diploma graduates has decline from 387 in 1991-92 to near zero. Although the first degree graduates from the Nursing Education Program (NEPS) are scheduled to graduate in the Fall of 2000, some will choose a "fast track" option to graduate in December 1999.

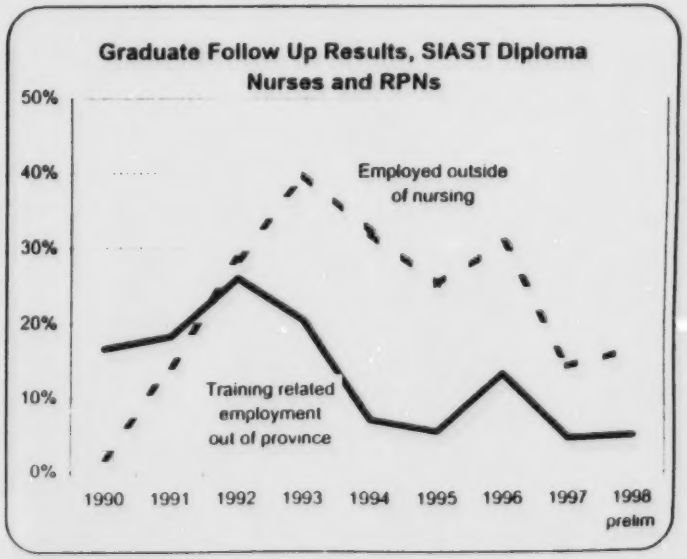
   In 1999-00, 76 RNs/RPNs are expected to graduate, 16 from the diploma program at SIAST and 60 from the University of Saskatchewan. The number of graduates is expected to recover after 1999-2000.

   (Reference: Section 2.1)

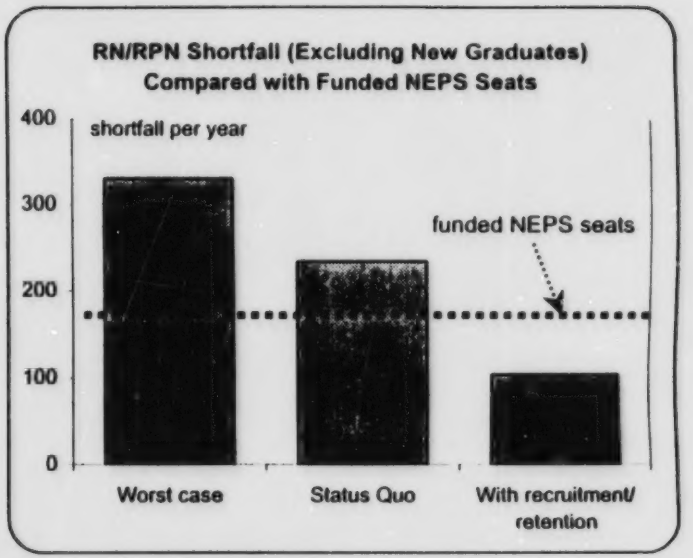


8. Since the mid 1990s when many RN/RPN graduates were not able to find full-time training-related employment immediately after graduation, there has been a steady but slow turnaround. Those difficulties coincided with an increase in the number of recent graduates who were moving to other provinces or countries, a trend which has also reversed in the last few years.

   (Reference: Sections 2.3 and 3.4)



9. Three scenarios for the attrition rate — the proportion of RNs/RPNs leaving the profession before age 65 — are developed in Section 2.4. These supply scenarios are compared to a constant demand scenario in Section 4.3.



Worst Case:

If the attrition rate continues to increase over the next five years, 331 RNs/RPNs per year will leave the profession. This will require an equivalent number of new graduates, international or interprovincial in-migrants, or re-entrants to maintain the number of RNs/RPNs at 9,567 registrants.

Status Quo:

If the attrition rate remains at its current level for the next five years, 235 RNs/RPNs per year will leave the profession. This will require an equivalent number of new graduates, international or interprovincial in-migrants, or re-entrants to maintain the number of RNs/RPNs at 9,567 registrants.

Aggressive Retention:

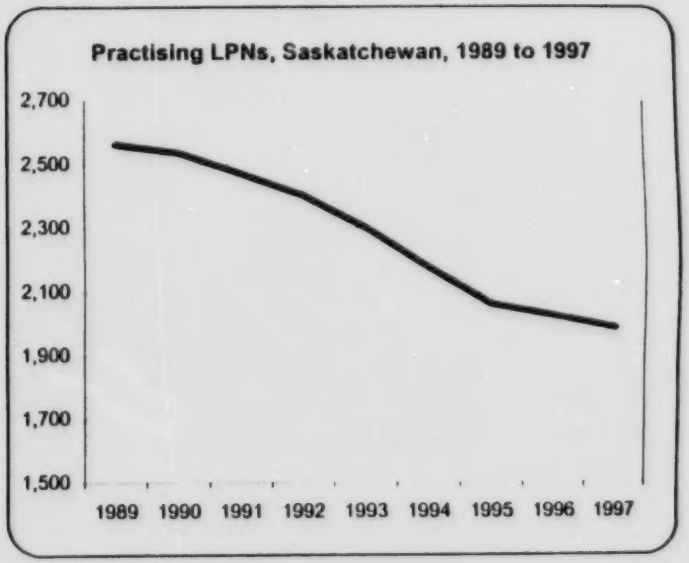
If the attrition rate is lowered for the next five years, 105 RNs/RPNs per year will leave the profession. This will require an equivalent number of new graduates, international or interprovincial in-migrants, or re-entrants to maintain the number of RNs/RPNs at 9,567 registrants.

So the number of RNs/RPNs that will have to be trained/recruited over the next five years varies from a high of 331 per year in the worst case scenario to a low of 105 per year with an aggressive retention scheme.

Licensed Practical Nurses

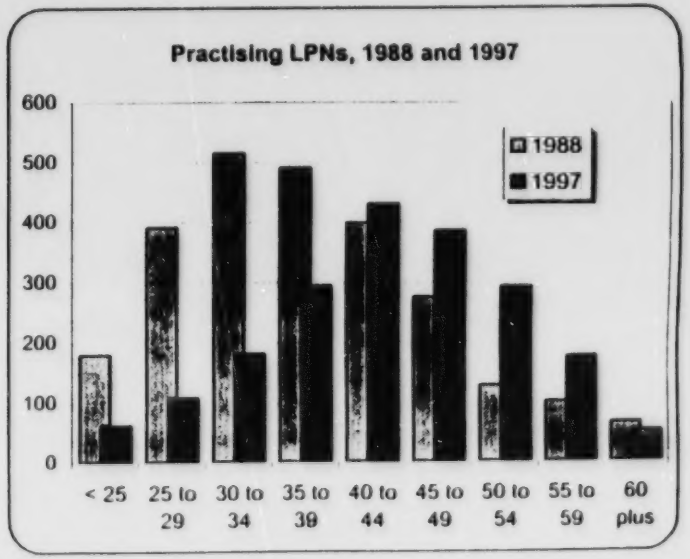
10. The number of Licensed Practical Nurses (LPNs) registered with the association has been declining steadily in Saskatchewan. From 1989 to 1997, the number has declined by 22%, about 70 persons per year on average. Preliminary estimates for 1998 show a further decline in the number of practising LPNs.

    (Reference: Section 3.1)



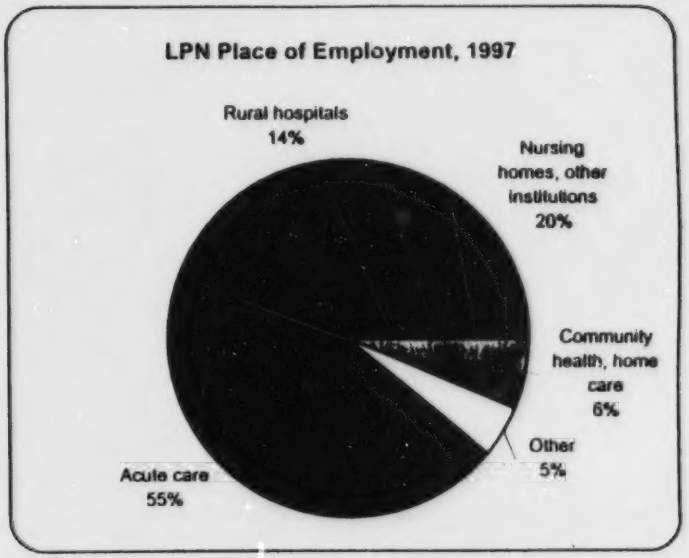
11. There are a significant number of LPNs in the age groups near or past the age of eligibility for early retirement. The age distribution of LPNs is, in fact, more skewed toward the older ages than the distribution for RNs/RPNs. LPNs do not, however, seem to show the same propensity as RNs to leave the profession before they reach normal retirement age.

    (Reference: Section 2.4)



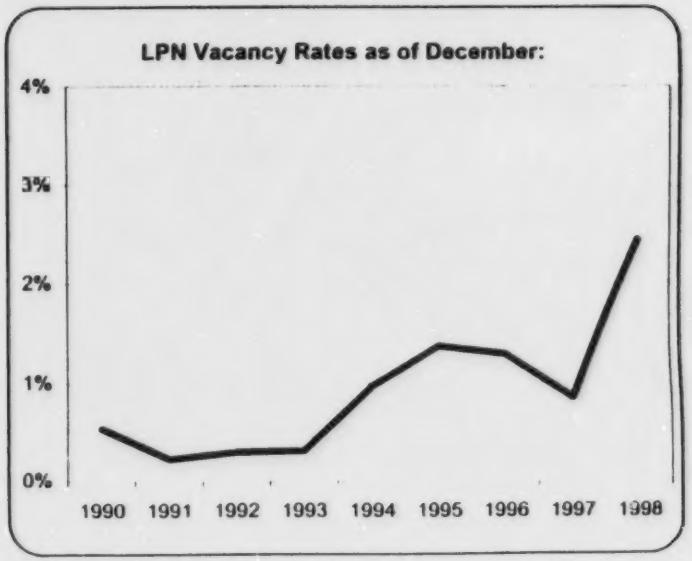
12. The majority of LPNs still work in acute care institutions. Relatively few (6%) are working in the community health or home care sectors. In the last five years, the proportion working in acute care has increased while the proportion working in nursing homes and other institutional settings has declined.

(Reference: Section 3.2)



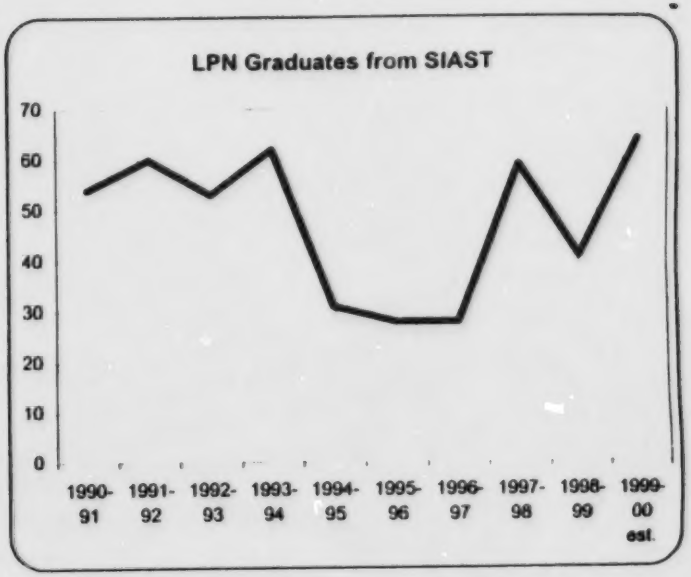
13. As with Registered Nurses, there was a sharp increase in LPN vacancy rates in 1998. At 2.5%, however, the vacancy rate is still lower than the 4% rate for general duty Registered Nurses.

(Reference: Section 4.1)



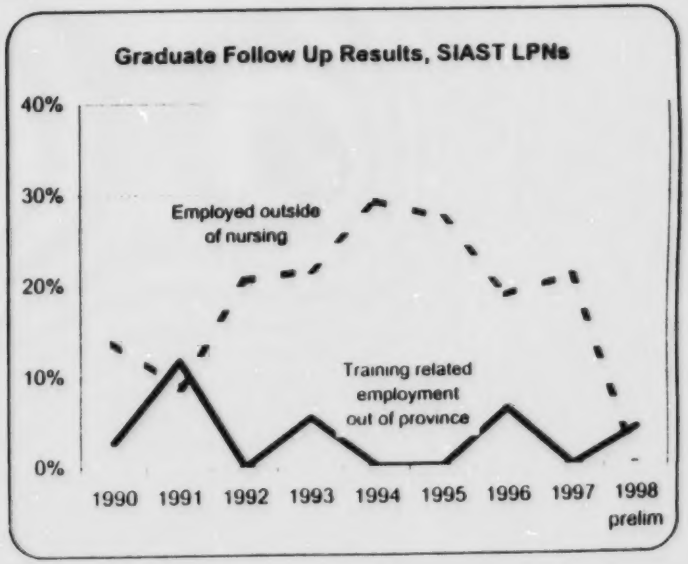
14. The number of graduates from the SIAST LPN program was below average in the mid 1990s but has recovered somewhat since then. In 1999-2000, and estimated 64 persons will graduate from the LPN programs at SIAST.

(Reference: Section 2.1)

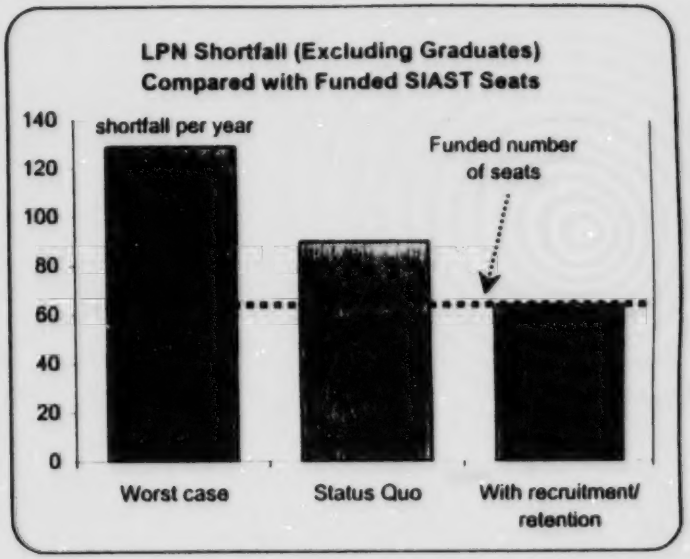


15. LPNs graduates are, according to SIAST graduate follow-up surveys, less likely than graduates of nursing programs to move out of the province to work. This was true even during the mid 1990s when LPNs graduates were have difficulty finding employment related to their training.

(Reference: Section 2.3)



16. Three scenarios for the attrition rate — the proportion of LPNs leaving the profession before age 65 — are examined in Section 2.4 and compared with the current number of 2,000 LPNs registered.



Worst Case:

If the attrition rate continues to increase over the next five years, 129 LPNs per year will leave the profession. This will require an equivalent number of new graduates, international or interprovincial in-migrants, or re-entrants to maintain the number of LPNs at 2,000.

Status Quo:

If the attrition rate remains at its current level for the next five years, 90 LPNs per year will leave the profession. This will require an equivalent number of new graduates, international or interprovincial in-migrants, or re-entrants to maintain the number of LPNs at 2,000.

Aggressive Retention:

If the attrition rate is lowered for the next five years, 64 LPNs per year will leave the profession. This will require an equivalent number of new graduates, international or interprovincial in-migrants, or re-entrants to maintain the number of LPNs at 2,000.

The number of LPNs that will have to be trained/recruited over the next five years varies from a high of 129 per year in the worst case scenario to a low of 64 per year with an aggressive retention scheme.

1.0 INTRODUCTION AND METHODOLOGY

This report was commissioned by the provincial departments of Health and Post-Secondary Education and Skills Training in March 1999. It is a summary of research examining the supply of and demand for nurses in Saskatchewan.

The research was conducted by Doug Elliott from *Sask Trends Monitor*, a Saskatchewan based consulting firm. The research was conducted under the direction of a steering committee of officials from the Departments of Health and Post-Secondary Education and Skills Training. Responsibility for the accuracy of the data and any conclusions drawn remain with the author.

The project goals of the research were to:

- examine recent trends in the supply of Saskatchewan nurses;
- examine recent trends in the demand for nursing in the province; and
- develop a short term forecast for the size of the imbalance between supply and demand.

The research is intended to develop a common set of understandings about the current situation within which further discussions and policy decisions could be made. The research was based on existing data sources; time and budget constraints prevented the development of new data sources.

1.1 Context and Background

The research was conducted in the midst of a good deal of media and public attention to health care issues and during a period of labour unrest involving the Saskatchewan Association of Health Care Organizations, District Health Boards, and most of the unions involved in health care. This had the effect of limiting the kind of information that could be accessed from the stakeholders in the health care system.

The Saskatchewan Union of Nurses, the Canadian Union of Public Employees, the Service Employees International Union and the Saskatchewan Government Employees Union were all bargaining with the Saskatchewan Association of Health Care Organizations in the Spring of 1999. There were two work stoppages including a ten day strike by SUN while the research was being conducted.

Based partly on interim findings from the research, the provincial government announced an increase in enrollment for nursing programs at Saskatchewan educational institutions in mid May.

1.2 Supply and Demand Approach

The elements of supply that were considered for the study include:

- the number of graduates from Saskatchewan post-secondary educational institutions;
- interprovincial and international flows of nursing staff;
- attrition and retirement from the nursing profession; and
- rates of turnover and vacancies.

Total current employment is the basis of demand for nursing staff. The study examined several aspects of this demand including:

- wage rates and employment income;
- hours of work;
- types of positions held by nursing staff; and
- types of employers of nursing staff.

To forecast the imbalance between supply and demand, the supply of nursing staff was forecast using an age-specific attrition/retention model. This was then compared with a *status quo* forecast of future demand. The difference between supply and demand was then compared with current and expected levels of graduation from Saskatchewan post-secondary educational institutions to quantify the imbalance.

The approach assumed the basic *status quo* in the nursing profession. That is, that there will be no abrupt changes over the next 5 to 10 years in:

- the delivery of health care services in the province;
- the scope of practise for health care professionals;
- the educational requirements for registered nurses, registered psychiatric nurses, or licensed practical nurses;
- the provisions of the collective agreements with SAHO, SUN, SGEU, CUPE, and SEIU

Many of these assumptions are known not to apply. There are a number of changes in the labour market generally and the nursing labour market particularly that will affect supply and demand These are discussed in a general way in this report in Section 2.5 for the supply side and Section 3.5 for the demand side.

1.3 Description of Data Sources

A number of different data sources were used in the research. Those that are used extensively are summarized in the appendices; other sources are described and identified in the text as they are used. The main sources are described below.

When the data sources permit, the findings are shown separately for Registered Nurses (RNs), Registered Psychiatric Nurses (RPNs) and Licensed Practical Nurses (LPNs). In some cases, RNs and RPNs were aggregated because the data sources do not distinguish between the two professions. For the same reason, Licensed Practical Nurses are combined with unregulated nursing assistants in some sections.

Main Data Sources

CIHI database	This database, managed jointly by Statistics Canada and the Canadian Institute for Health Information, is derived from the annual licensing/renewal forms of all Registered Nurses registering in a province or territory in Canada. A procedure used by CIHI/Statistics Canada removes most duplicate records for nurses registered in more than one province, allocating them to their province of residence if multiple registrations are evident. Data from this source are published by the Health Statistics Division of Statistics Canada under the title *Registered Nurses Management Data*, Item #83F0005XPB.
SALPN database	A summary (without individual identifiers) of the computerized registration database maintained by the Saskatchewan Association of Licensed Practical Nurses was obtained electronically for this research.
Health Employers Survey	This annual survey of health employers is conducted by Saskatchewan Health. An electronic copy of the survey results was obtained for this research.
Education data	Applications, enrollments, and graduation statistics from the Saskatchewan Institute for Applied Arts and Sciences (SIAST) were obtained from the Planning, Research and Development Division of SIAST. The application, enrollment and graduation data for the degree program at the University of Saskatchewan School of Nursing were obtained from the University Studies Group at the U of S. Results of the graduate follow-up surveys were obtained from published SIAST reports.

Census data

The data from the 1996 Census and the 1991 Census were obtained from CDROMs published by Statistics Canada — the Dimension Series, 94F0009XDB96068, and the Nation Series, 93F0029XDB96005.

2.0 SUPPLY OF NURSING STAFF

This section addresses the supply side of the supply and demand equation for Registered Nurses (RNs), Registered Psychiatric Nurses (RPNs) and Licensed Practical Nurses (LPNs). How many Saskatchewan residents are qualified to be RNs, RPNs, or LPNs? How many of them are ready and willing to work? How many are we adding to the pool from post-secondary educational institutions and, conversely, how many are we losing through attrition, retirement, and migration?

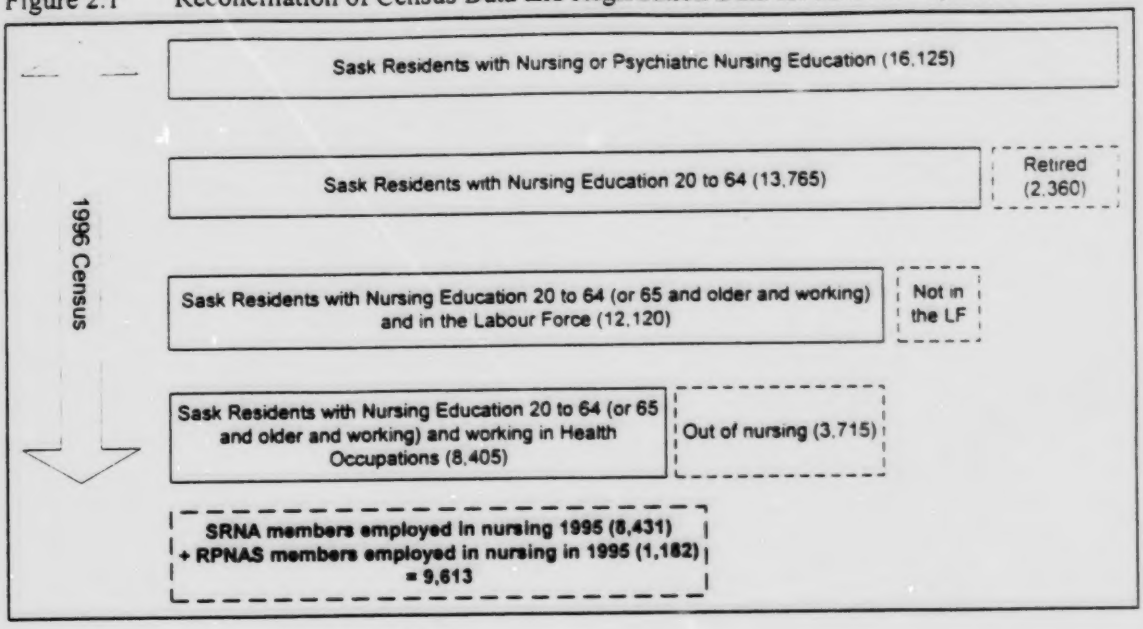
Section 2.1 looks at graduations from Saskatchewan post-secondary institutions. Graduates from SIAST and the School of Nursing do not represent all of the new supply but they are the major source. Section 2.2 describes the pool of persons who have an education in nursing, according to the Statistics Canada census. Inter-provincial migration is a major factor in the supply of nursing professionals so these trends are examined in Section 2.3. The other major factor affecting supply is the number of retirements, both in the traditional sense and in the sense of pre-retirement attrition from the professions into non-nursing employment or out of the labour force entirely. Section 2.4 looks at these data and forecasts the rate of attrition and the supply of RNs/RPNs and LPNs over the next five to ten years. Other factors that are more difficult to quantify can affect the supply; these are discussed in a qualitative way Section 2.5.

The main source of information for section 2.2 is the Statistics Canada census whereas the main source of data for the projection in section 2.4 is the CIHI database of practising RNs. Figure 2.1 below, shows how these two data sources can be reconciled. No equivalent reconciliation for the LPNs can be made because the census data is not in sufficient detail to distinguish between licensed practical nurses and unregulated nursing assistants.

According to the census, there were 8,405 persons with a nursing education (includes both registered nurses and registered psychiatric nurses) working in health occupations whereas the SRNA practising membership in 1995 was 8,431. There were also 1,182 practising members of the RPNAS in 1995. Statistics Canada would not typically classify RNs/RPNs as working in "health" occupations if their primary function was management, research, education, counselling or therapy. So the number of persons with a nursing education and working in health occupations (8,405) is lower than the practising membership of the SRNA/RPNAS (9,613).

In spite of the differences, the reconciliation is reasonably successful. In other words, the use of the census data in Section 2.2 to describe nurses who have left the profession is reasonable from a statistical point of view.

Figure 2.1 Reconciliation of Census Data and Registration Data for RNs/RPNs, 1995


Sask Residents with Nursing or Psychiatnc Nursing Education (16,125)
Sask Residents with Nursing Education 20 to 64 (13,765)
Retired (2,360)
1996 Census
Sask Residents with Nursing Education 20 to 64 (or 65 and older and working) and in the Labour Force (12,120)
Not in the LF
Sask Residents with Nursing Education 20 to 64 (or 65 and older and working) and working in Health Occupations (8,405)
Out of nursing (3,715)
SRNA members employed in nursing 1995 (8,431) + RPNAS members employed in nursing in 1995 (1,182) = 9,613

2.1 Trends in Graduations

Until the last few years, the number of RNs, RPNs, and LPNs that were graduating from Saskatchewan post-secondary education institutions was relatively easy to measure. Recent changes in the nursing education programs have made the prediction of the number of graduates more uncertain.

In 1984, the SRNA passed a resolution adopting the goal of having a baccalaureate as the entry to practice by the year 2000. In 1993 the University Reviews Commission recommended a single nursing education program and the Saskatchewan Department of Health approved the concept in principle in 1993. By March, 1996, the educational institutions began student recruitment for the first intake in the Nursing Education Program of Saskatchewan (NEPS), a collaborative venture of the SIAST and the University of Saskatchewan's College of Nursing.

Although NEPS is a four year degree program, students may choose to exit the program after their third year with a diploma in either nursing, psychiatric nursing, or both. They also have a "fast track" option which enables them to graduate in 3½ years by taking summer classes in their final year. The first degree graduates from NEPS will occur in the Spring of 2000 although several have chosen the fast track option and will graduate in December, 1999. Graduates from NEPS will be eligible for licensure as Registered Nurses and/or as Registered Psychiatric Nurses.

The College of Nursing continues to offer a two-year program enabling RNs/RPNs with a diploma to obtain a Nursing degree.

Registered Nurses/Registered Psychiatric Nurses

Table 2.1 shows the number of students enrolled at and graduating from:

- the SIAST nursing programs, both RNs and RPNs,
- the College of Nursing degree program, and
- the new NEPS program.

More detail on these data are present in Appendix 5.

The graduates from the College of Nursing program for RNs with a diploma are excluded from the table because RNs who upgrade their education from a diploma to a degree do not add to the total supply of RNs in the province. For the same reason, persons obtaining a Masters degree in Nursing are not included in the figures.

Table 2.1 Enrollments and Graduation, Saskatchewan Registered Nurses and Registered Psychiatric Nurses

School years	Diploma Program			Degree program excluding Masters and Degree Program for RNs			Total new graduates
	Capacity	Enrollments in year 1	Graduates	Admission quota	Enrollments in year 1	Graduates*	
1989-90	410	426	345	80	96	54	399
1990-91	410	444	378	80	88	63	441
1991-92	350	400	390	40	36	68	458
1992-93	322	346	357	80	80	67	424
1993-94	272	300	326	80	81	32	358
1994-95	232	256	253	80	67	65	318
1995-96	192	240	210	80	64	75	285
First Intake for NEPS, fall 1996							
1996-97	16	14	214	180	202	62	276
1997-98	...	...	51	180	185	57	108
1998-99 est	...	...	16**	180	239	60	76
1999-2000 est	...	...	...	...	...	...	138
2000-01 est	...	...	...	...	...	...	146
2001-02 est	...	...	...	...	...	...	238

* these are based on the calendar year, i.e. 1996-97 data include graduates in both the spring and fall of 1997
** students who exit in their third year of NEPS as diploma nurses

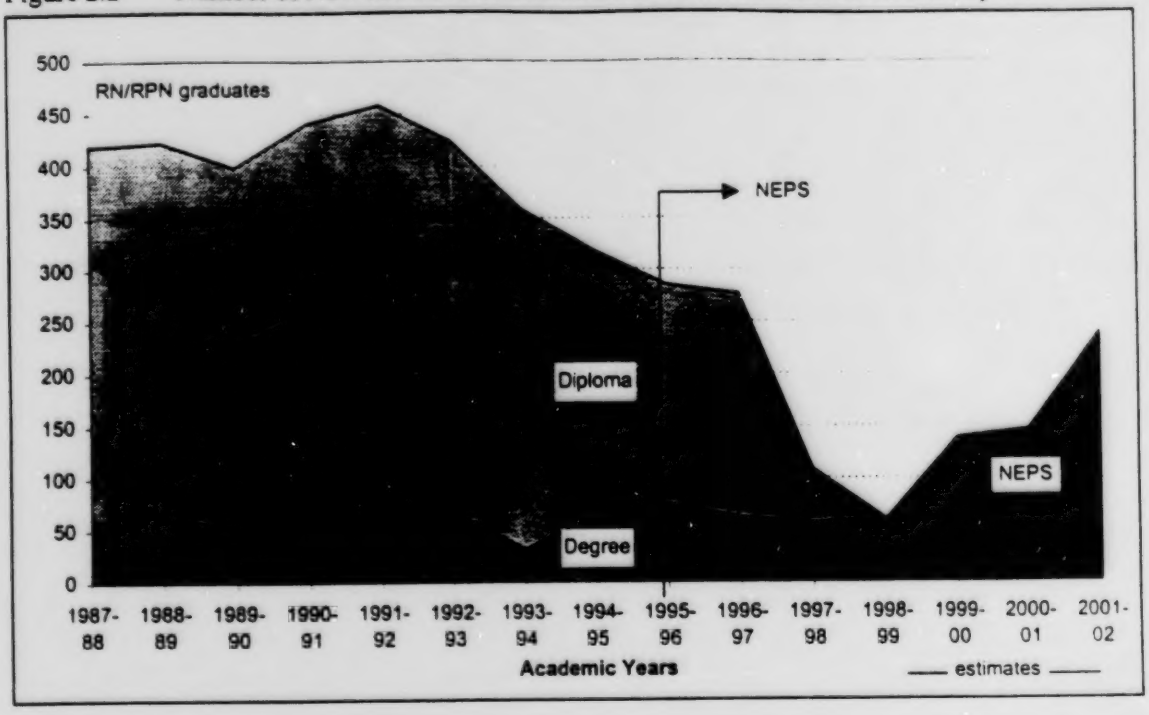
Sources:

Diploma Program; SIAST Planning, Research and Development Division;
Degree Program, University Studies Group, University of Saskatchewan
Estimates: Saskatchewan Post-Secondary Education and Skills Training

A number of observations can be made about the data in Table 2.1 and Figure 2.2. Firstly, there has been a steady decline in the number of new graduates since 1991-92. In the early 1990s, there were typically 400 or more graduates per year but the number has declined to an estimated 76 in 1998-99.

Secondly, enrollments in NEPS are currently at more than 200 per year. When these students graduate, the number of new RNs/RPNs graduating from Saskatchewan post-secondary institutions will recover from their current low.

Figure 2.2 Number of New RN/RPN Graduates from Saskatchewan Post Secondary Institutions



The steady supply of new graduates with a degree has increased the proportion of practising Registered Nurses with a degree. Based on registration data from the Saskatchewan Registered Nurses Association (SRNA) in Appendix 3, the proportion of practising nurses with a degree was near 20% in 1998 (see Figure 2.3). RNs with a degree are concentrated in senior positions; among those working in staff or community health positions, the proportion with a degree is 15%.

The proportion of Saskatchewan RNs with a degree in 1998 (19%) is lower than in most other provinces (see Figure 2.4) and below the national average of 23%.

Figure 2.3 Proportion of Saskatchewan RNs with a Degree

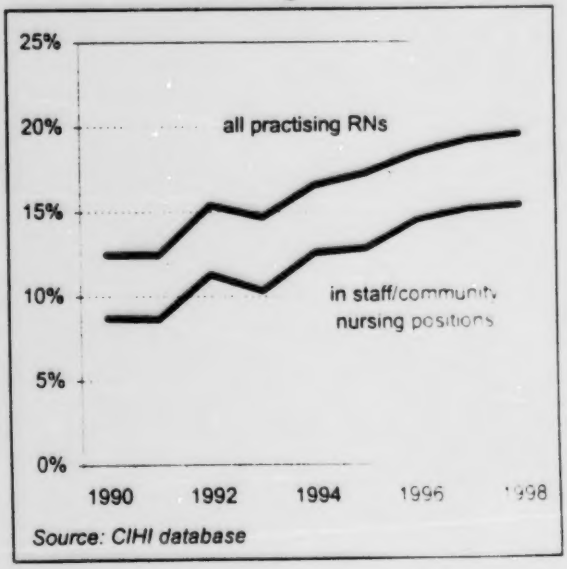
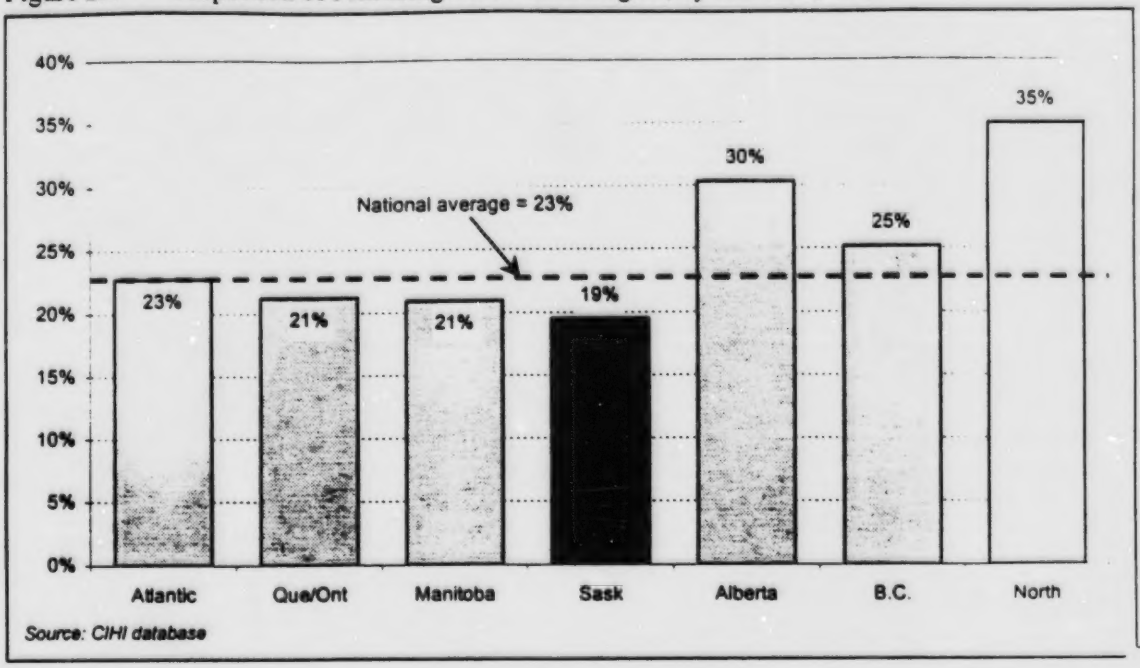


Figure 2.4 Proportion of Practising RNs with a Degree, by Province, 1998



Licensed Practical Nurses

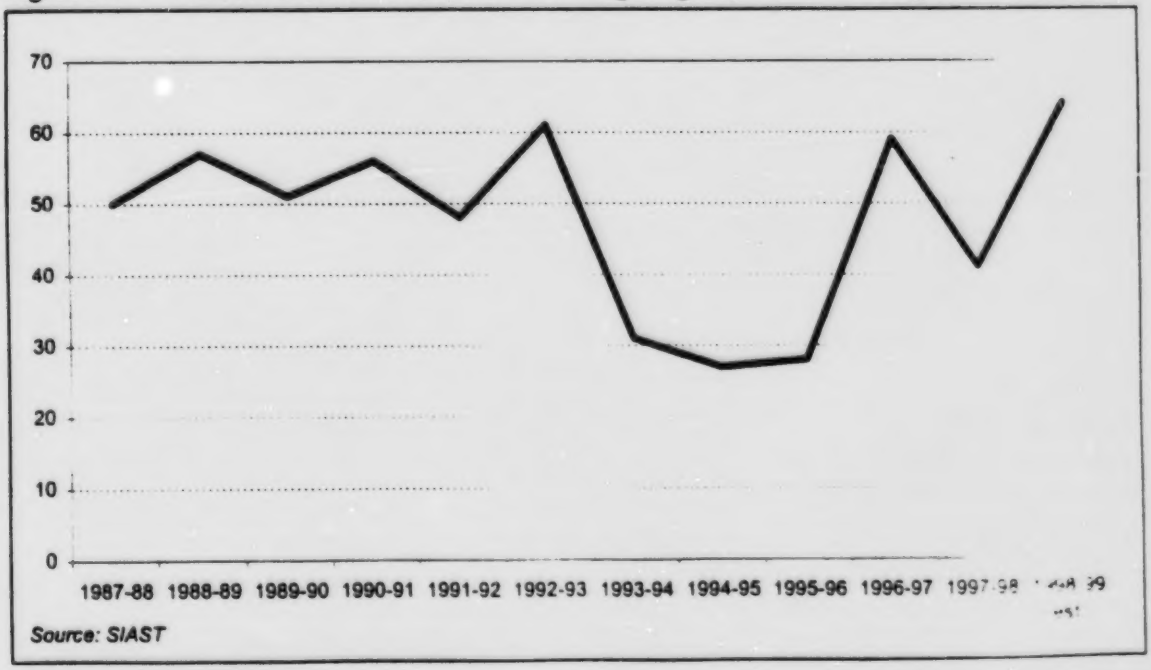
The educational data for LPNs is summarized in Table 2.2 and Figure 2.5. The situation for LPNs is much more stable than it is for RNs. Except for a drop between 1993-94 and 1995-96, when enrollment declined, the number of graduates has fluctuated between a low of 41 in 1997-98 to a high of 64 in 1998-99.

Table 2.2 Enrollments and Graduation, Saskatchewan Licensed Practical Nurses

Academic years	SIAST and Regional Colleges		
	Funded seats	Enrollments in year 1	Graduations
1990-91	55	81	56
1991-92	55	71	48
1992-93	48	73	61
1993-94	40	48	31
1994-95	40	57	27
1995-96	40	49	28
1996-97	40	44	59
1997-98	40	46	41
1998-99 est	40	67	64

Source: SIAST Planning, Research and Development Division

Figure 2.5 Number of Graduates, Practical Nursing Program, SIAST and Regional Colleges



Source: SIAST

2.2 Trends in Qualified Persons

The number of graduates, described over time, provides a measure of the number of qualified persons that Saskatchewan is adding to the overall pool. The population is not, however, static and the actual number of persons with the educational qualifications to be RNs/RPNs or Practical Nurses at any point in time is the net cumulative effect of many years of :

- mortality;
- interprovincial and international migration to and from the province; and
- the rate of graduations.

One of the questions on the "long form" of the Statistics Canada census can help shed some light on the number of people who have a post-secondary education in Nursing or Nursing Assistance[1]. The question asks, for those who have completed a post-secondary degree, certificate, or diploma, what the major field of study was for that highest degree, certificate, or diploma. These responses are then classified by Statistics Canada into one of 10 broad categories, 121 "minor" groups, and 425 "unit" groups. Only the minor and unit groups are useful for examining health professions.

These counts will slightly understate the number of people who are "educationally qualified"[2] to be registered nurses, registered psychiatric nurses, or licensed practical nurses because those who have gone on to higher levels of education still have their nursing education even though they may be classified in their second, higher, level of education.

Table 2.3 shows responses for Saskatchewan residents in 1991 and 1996 broken down into whether or not the degree/diploma/certificate was received at a university or a non-university institution. There has clearly been growth between 1991 and 1996 in the number of people educationally qualified in nursing or nursing assistance. The increase is evident in all of the nursing unit groups and especially in the "health care aide" unit group in the nursing assistance group. The number of persons qualified as nursing assistants seems to have dropped between 1991 and 1996 although this may be an artifact of the way that the data was coded from the census.

In the balance of this report, we report at the minor group — nursing or nursing assistance — level. This is partly because most of the published census data is at this level and partly to avoid the ambiguity in some of the unit group titles.

---

1 "Nursing assistance" is a term used by Statistics Canada to measure educational qualifications. It includes LPNs and nursing aides and orderlies.

2 The term "educationally qualified" will be used in the balance of this section to refer to people who have received the education required to be a registered nurse, a registered psychiatric nurse, or a licensed practical nurse. The use of the term is not intended to indicate that they are qualified to practice without the appropriate registration.

Table 2.3 Field of Study for Saskatchewan Residents, 1991 and 1996

Field of Study		Non-university		University		Total	
		1991	1996	1991	1996	1991	1996
Nursing	Nursing - general	9,660	10,485	3,250	3,915	12,910	14,400
	Nursing - specialties	120	150	0	50	120	200
	Psychiatric nursing	845	1,180	200	190	1,045	1,370
	Public health nursing	0	10	85	60	85	70
	Nursing - Other	15	45	35	35	50	80
	Total	10,650	11,870	3,575	4,255	14,225	16,125
Nursing Assistance	Nursing assistant	5,565	4,260	0	0	5,565	4,260
	Health care aide/support	2,270	4,035	0	0	2,270	4,035
	Long-term care aide	105	70	0	0	105	70
	Nursing aide, orderly	520	595	0	0	520	595
	Total	8,455	8,960	0	0	8,455	8,960

Source: Statistics Canada Census

RNs/RPNs

We see from Table 2.3 that there were 16,125 persons with a nursing diploma or degree living in the province in 1996. This is almost twice as many people as the number who were registered with the SRNA/RPNAS and, therefore, able to practice nursing. The pool of educationally qualified people who are not registered is one source of supply for future nurses although we need to adjust the numbers by removing those who are unlikely to return to the profession, namely those who are past retirement age or completely out of the labour force.

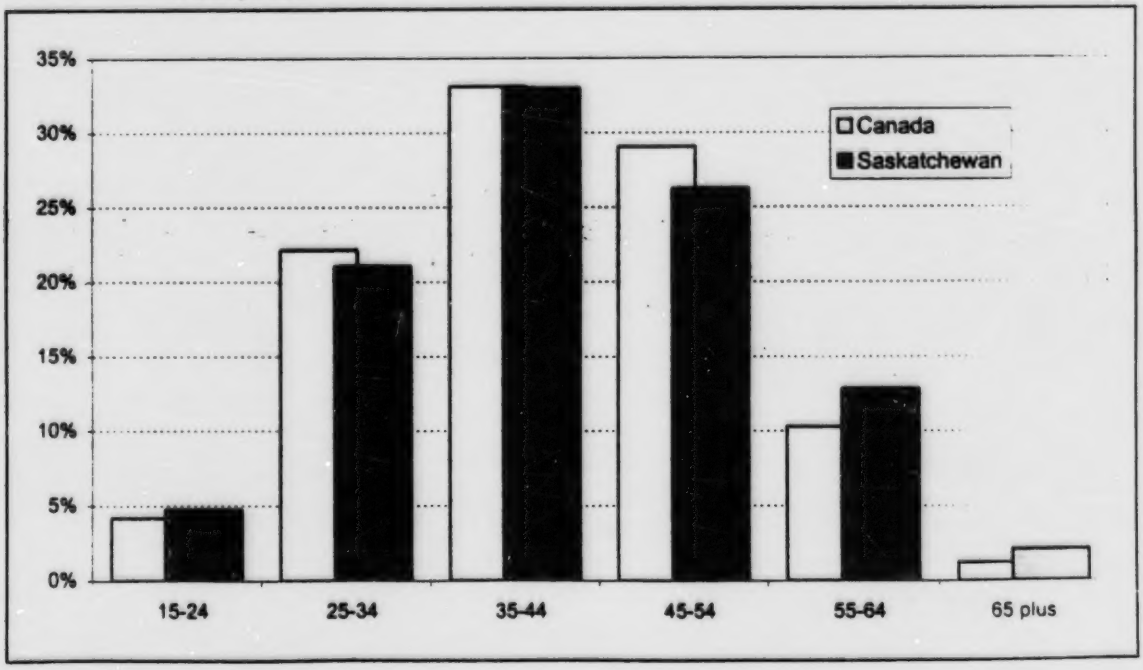
The first step in this adjustment is the removal of those who are past retirement age, taken as 65 or older. This immediately reduces the number by 15% to 13,765. A smaller number of these working age people are not in the labour force at all — that is, neither working nor seeking work and if they are removed the number is reduced by a further 12% to 12,120. Table 2.4 shows the age structure of this group of educationally qualified RNs/RPNs compared with the same data nationally and for the two neighbouring provinces of Alberta and Manitoba. The only significant difference between Saskatchewan and other provinces seems to be in our above-average proportion of those in the 55 to 64 age group and our below-average proportion in the 45 to 54 age group (see Figure 2.6).

Table 2.4 Labour Force Participants with a Degree or Diploma in Nursing, Selected Provinces, 1996

	Alberta		Saskatchewan		Manitoba		Canada	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
15 to 24	1,060	3%	575	5%	435	3%	13,010	4%
25 to 34	6,505	21%	2,550	21%	3,215	23%	68,910	22%
35 to 44	10,105	33%	4,000	33%	5,075	36%	102,950	33%
45 to 54	9,370	31%	3,180	26%	3,960	28%	90,365	29%
55 to 64	3,215	10%	1,555	13%	1,235	9%	32,050	10%
65 plus	400	1%	255	2%	180	1%	3,735	1%
Total	30,650	100%	12,120	100%	14,115	100%	311,025	100%

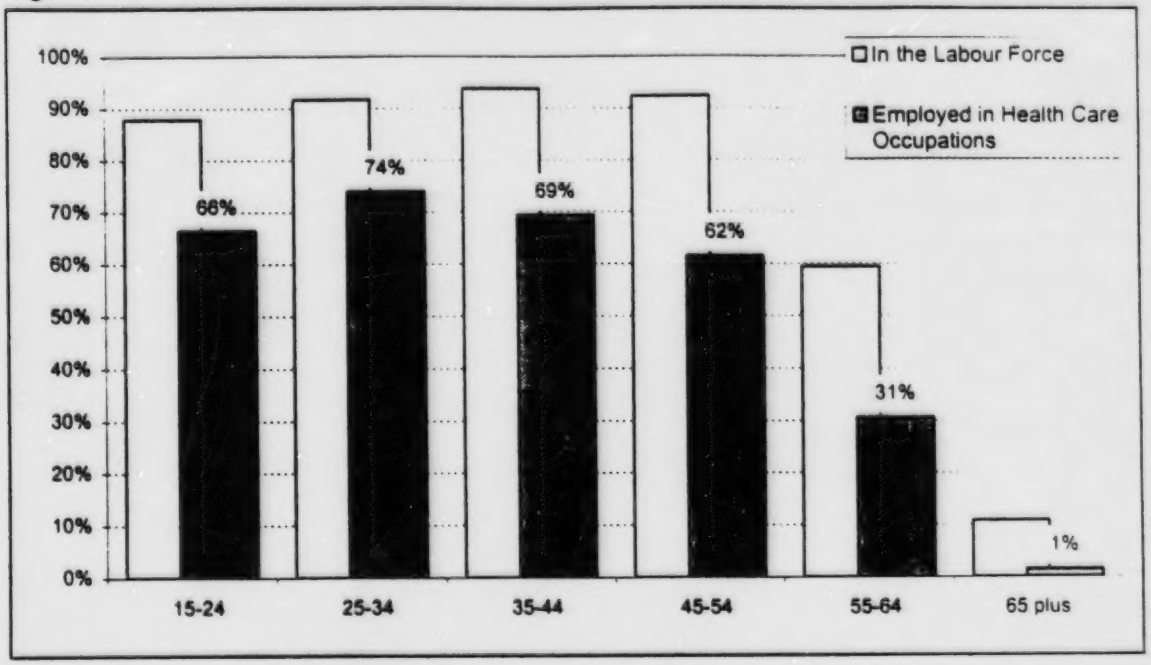
Source: Statistics Canada Census

Figure 2.6 Age Distribution for Persons Educationally Qualified as Nurses and in the Labour Force, 1996



Using the census, we can determine that of the 12,120 with nursing qualifications and in the labour force, approximately two thirds (69%) were employed in "health occupations"[1] in June of 1996. Expressed as a proportion of those who are educationally qualified to be nurses including those out of the labour force, 52% are working in health occupations. The importance of this figure is in the age distribution of those who are working in health occupations — see Figure 2.7.

Figure 2.7 Labour Force Activity for Persons Educationally Qualified as Nurses, June 1996



There is clearly a "falling off" of training-related employment in the higher age groups. Among those 45 to 54, 62% are in health occupations whereas only 31% of those 55 to 64 years of age are employed in health occupations. Part of the explanation for the low participation rate will be in the fact of early retirements; four out of ten (41%) qualified persons in the 55 to 64 age group are not in the labour force at all, probably because of early retirements or health-related problems that prevent them from working. That still, however, leaves at least 28% of the educationally qualified persons in this age group who are working in non-health care occupations.

---

1 "Health occupations" is the most detailed occupational breakdown available from published data. Besides the nursing profession, the occupations in this group (defined using the 1991 Standard Occupational Classification) include physicians, veterinarians, optometrists, dentists, pharmacists, specialized therapists, medical technicians and technologists, dental technicians and therapists, nurse aides and orderlies.

Figure 2.8 shows how the 52% of Saskatchewan residents educationally qualified as nurses who are working in health occupations compares favourably with the proportion in other provinces.

Nationally the proportion is 51%, ranging from a low of 44% in British Columbia to a high of 61% in Quebec. Saskatchewan is near the national average and above the proportion in Alberta but below the proportion in Manitoba.

The low rate of participation among those in the 55 to 64 age group is important enough to examine in more detail. Indeed, the participation rate (the proportion in the labour force) among those educationally qualified as nurses and in this age group is lower than for many other post-secondary

Figure 2.8 Proportion of Persons Educationally Qualified as Nurses and Working in Health Occupations, 1996

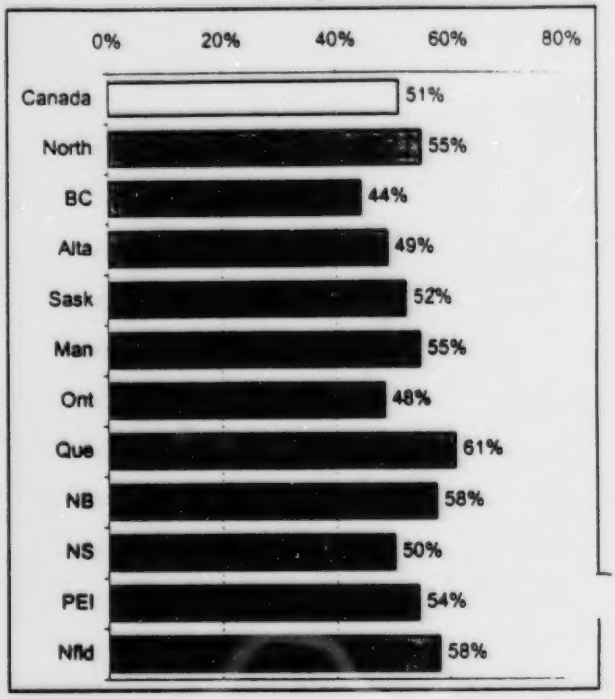
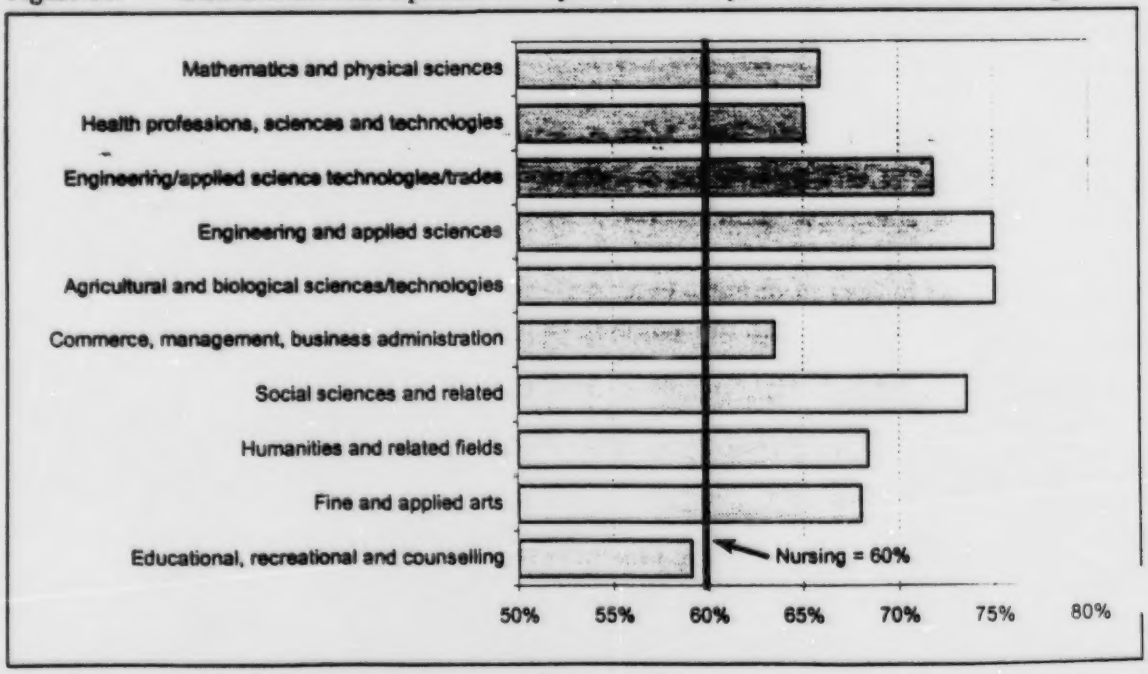


Figure 2.9 Labour Force Participation Rate by Field of Study, 1996, 55 to 64 Years of Age



graduates. In 1996, 60% of persons educationally qualified as nurses and 55 to 64 years of age were in the labour force compared with 67% for those with other post-secondary qualifications. Figure 2.9 shows that only those with education degrees or certificates are less likely than those with nursing degrees or diplomas to be in the labour force.

Table 2.5 shows employment in this age group according to the broad occupational groups and the field of study. Among the 1,510 persons educationally qualified as nurses and working in June 1996, the majority were in health occupations. The second largest occupation group was "Management and Administrative occupations" which could include management occupations in health care. The proportion of persons who are working in health occupations is much lower for the relatively few who have degrees than among those who have a diploma.

Figure 2.10 compares the proportion of qualified persons in Saskatchewan who are working in health occupations with those in other provinces, restricted to those in the 55 to 64 age group. This shows that the proportion is slightly lower in Saskatchewan, 31% compared with 32% nationally but the proportion is similar to the proportions in Alberta and Manitoba. In other words, Saskatchewan is not losing older nurses from health care occupations any more quickly than other provinces.

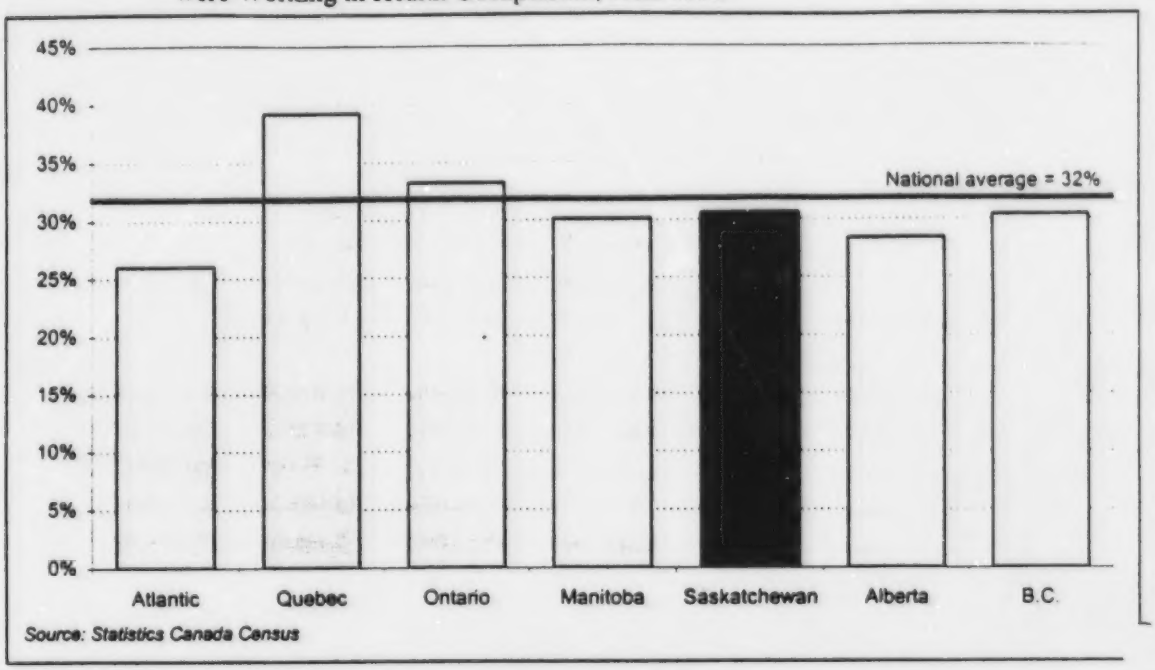
Table 2.5 Labour Force Activity and Occupation for Saskatchewan Persons Educationally Qualified as Nurses and in 55 to 64 Age Group, 1996

Occupation group	Diploma		Degree		Total	
	Number	Percent	Number	Percent	Number	Percent
Health occupations	745	56%	55	32%	800	31%
Management and administrative	205	15%	45	26%	250	10%
Social science, education, government service, and religion	75	6%	70	41%	145	6%
Occupations unique to primary industry (includes farming)	135	10%	**	**	140	5%
Sales and service occupations	105	8%	15	9%	120	5%
Other non-health occupations	55	4%	**	**	60	2%
Total employment	1,340	100%	170	100%	1,510	58%
Unemployed or not in the labour force	n/a		n/a		1,105	42%
Total	n/a		n/a		2,615	100%

** too small to be reliable

Source: Statistics Canada Census

Figure 2.10 Proportion of Persons 55 to 64 who were Educationally Qualified as Nurses and who were Working in Health Occupations, June 1996



Source: Statistics Canada Census

At the lower end of the age scale, only two thirds (66%) of recent graduates are employed in health occupations. This also deserves further analysis because one would expect younger nurses to immediately enter the labour force in the health field.

Table 2.6 shows that, of the third that were not working in health occupations, half are unemployed or out of the labour force and the other half are working but in non-health occupations. There is no evidence that those with degrees are more or less likely than those with diplomas to be working in health occupations. And unlike those in the 55 to 64 age group, those in the 15 to 24 age group are as likely as others with post-secondary qualifications to be in the labour force; Figure 2.11 shows that the labour force participation rate of 88% for those educationally qualified as nurses is near the average of 89%. In other words, the fact that younger graduates are not employed is part of the larger problem of youth unemployment and not specific to the nursing profession.

Table 2.6 Labour Force Activity and Occupation for Saskatchewan Persons Educationally Qualified as Nurses and in 15 to 24 Age Group, 1996

Occupation group	Diploma or certificate		Degree		Total	
	Number	Percent	Number	Percent	Number	Percent
Health occupations	330	80%	105	78%	435	66%
Non-health occupations	80	20%	30	17%	110	17%
Total employment	410	100%	135	100%	545	83%
Unemployed or not in the labour force	**	**	**	**	110	17%
Total labour force	**	**	**	**	655	100%

** not available

Source: Statistics Canada Census

Figure 2.11 Labour Force Participation Rates by Field of Study, 1996, Saskatchewan, 15 to 24 Years of Age

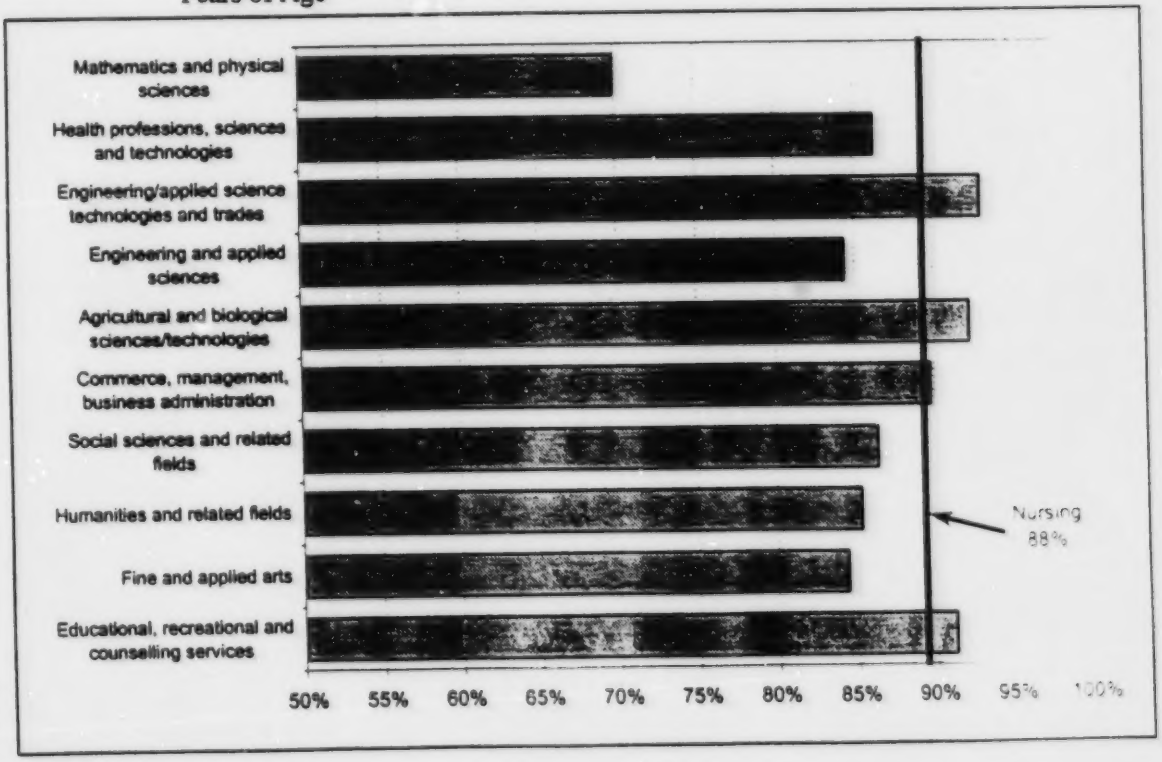
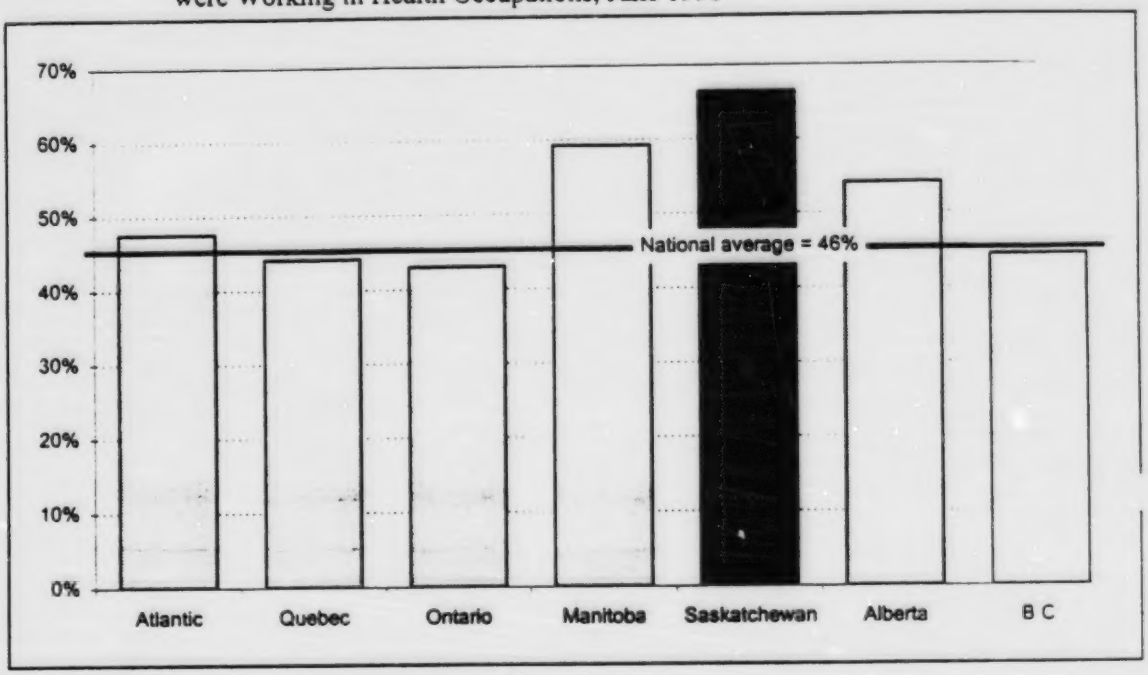


Figure 2.12 shows that Saskatchewan is, in fact, more successful in employing young nurses in health occupations. The 66% who are working in health occupations is well above the national average of 46% and above the proportions in Alberta and Manitoba.

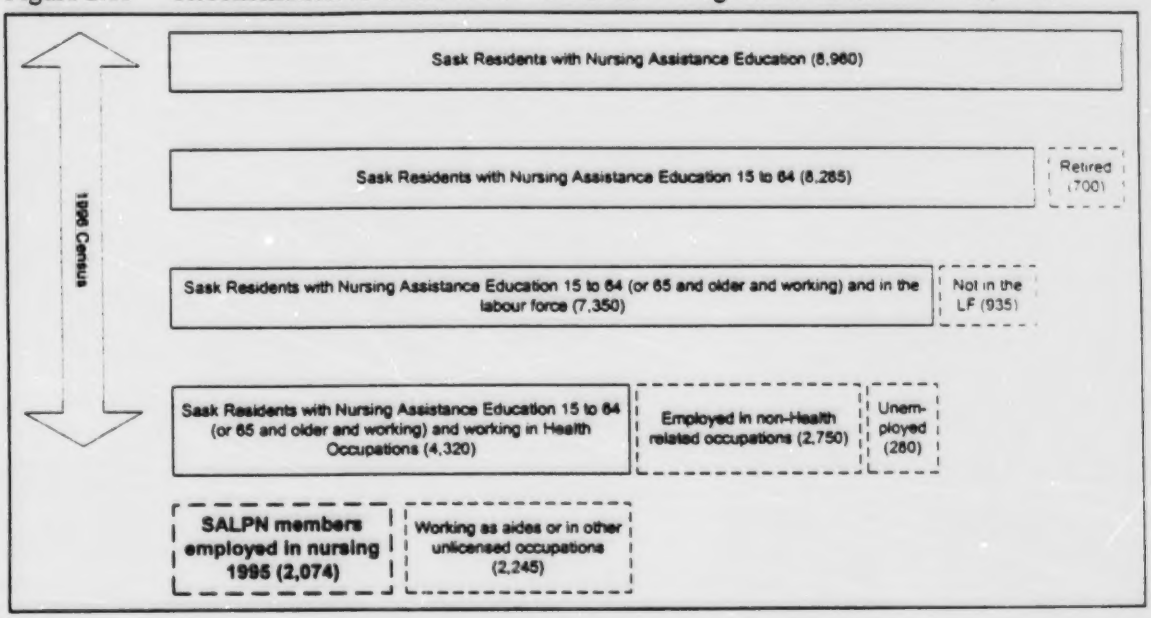
Figure 2.12 Proportion of Persons 15 to 24 who were Educationally Qualified as Nurses and who were Working in Health Occupations, June 1996



LPNs

We know from Table 2.3 that there were 8,960 persons with a post-secondary education in the broad "nursing assistance" group in the province in 1996. About one half of these have their education specifically in "nursing assistance", the closest equivalent to the Licensed Practical Nurse category used in Saskatchewan. This compares with the 2,074 persons who were registered in the LPN database in 1996. Figure 2.13 shows the degree to which the Census data can be reconciled with the registration data from the SALPN.

Figure 2.13 Reconciliation of Census Data with SALPN Registration Data for LPNs, 1995


1996 Census
Sask Residents with Nursing Assistance Education (8,960)
Sask Residents with Nursing Assistance Education 15 to 64 (8,285)
Retired (700)
Sask Residents with Nursing Assistance Education 15 to 64 (or 65 and older and working) and in the labour force (7,350)
Not in the LF (935)
Sask Residents with Nursing Assistance Education 15 to 64 (or 65 and older and working) and working in Health Occupations (4,320)
Employed in non-Health related occupations (2,750)
Unemployed (280)
SALPN members employed in nursing 1995 (2,074)
Working as aides or in other unlicensed occupations (2,245)

As with those who have a nursing education, only a proportion of the 8,960 with nursing assistance education are in the labour force. In June of 1996, that proportion was 82%, somewhat lower than the 85% of persons educationally qualified as nurses who were in the labour force. Table 2.14 shows the age structure of this group of 7,350 persons with a post-secondary education in the general "nursing assistance" category compared with the same data nationally and for the two neighbouring provinces of Alberta and Manitoba

As with those educationally qualified as nurses, there is a slight bulge in the age distribution in the 55 to 64 age group and a dip in the 45 to 54 age group when these data are compared with the national average or the neighbouring provinces (see Figure 2.14).

Table 2.7 Labour Force Participants with a Post-Secondary Education in Nursing Assistance, Selected Provinces, 1996

	Alberta		Saskatchewan		Manitoba		Canada	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
15 to 24	325	3%	405	6%	715	9%	9,395	7%
25 to 34	1,790	17%	1,675	23%	2,085	25%	32,150	24%
35 to 44	3,330	32%	2,590	35%	2,420	29%	44,115	33%
45 to 54	3,655	35%	1,795	24%	2,215	27%	36,735	27%
55 to 64	1,190	11%	820	11%	785	9%	11,415	8%
65 plus	180	2%	60	1%	50	1%	955	1%
Total labour force	10,465	100%	7,350	100%	8,280	100%	134,780	100%

Source: Statistics Canada Census

Figure 2.14 Age Distribution for Persons Educationally Qualified in Nursing Assistance and in the Labour Force, 1996

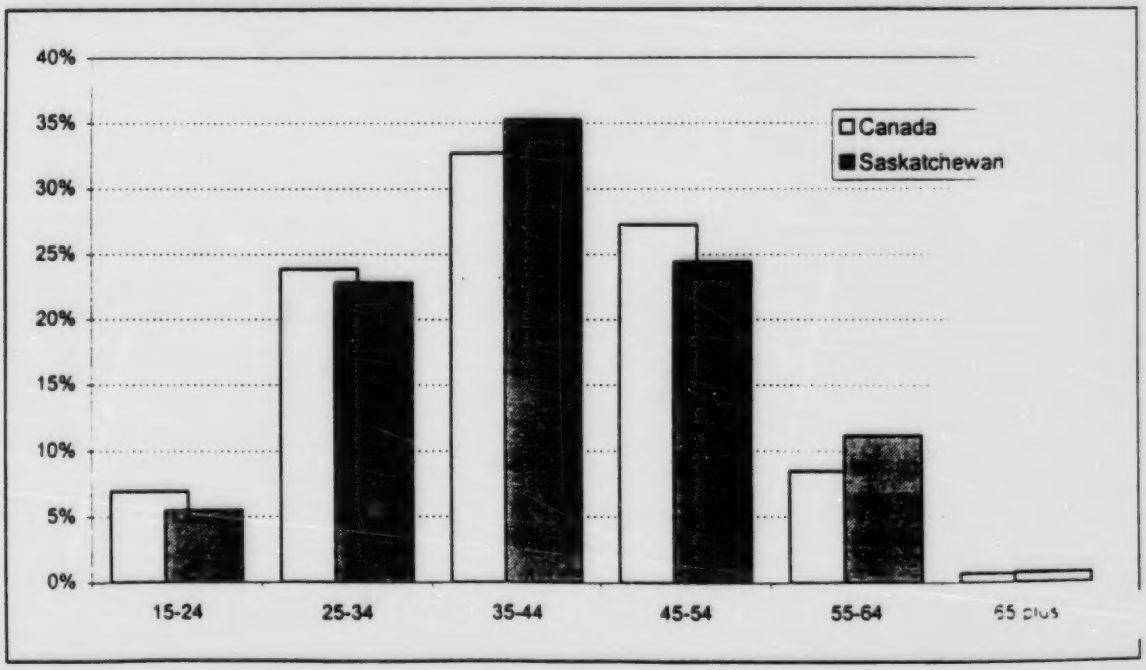


Figure 2.15 shows the proportion of persons educationally qualified as nursing assistants who were employed in health occupations in June 1996. Overall, the proportion is 48% compared with 52% for those educationally qualified as nurses.

Compared with those educationally qualified as nurses, those under 55 years of age are much less likely to be working in health occupations. For example, 50% of those educationally qualified as nursing assistants and in the 25 to 34 age group are in health occupations compared with 74% of those educationally qualified as nurses. As with those educationally qualified as nurses, older persons are less likely than younger ones to be employed in health occupations. There is one difference in this overall pattern — persons educationally qualified as nursing assistants and in the 55 to 64 age were more likely to be working in health occupations (36%) than persons educationally qualified as nurses (31%).

Figure 2.15 Labour Force Participation of Saskatchewan Residents Educationally Qualified as Nursing Assistants, June, 1996

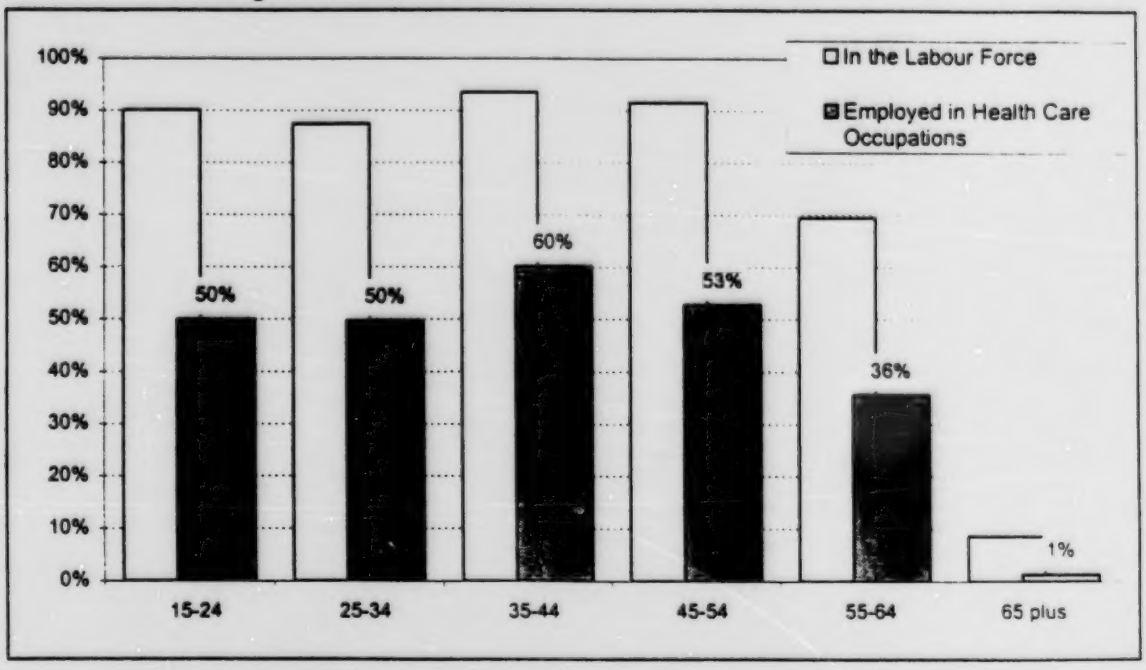
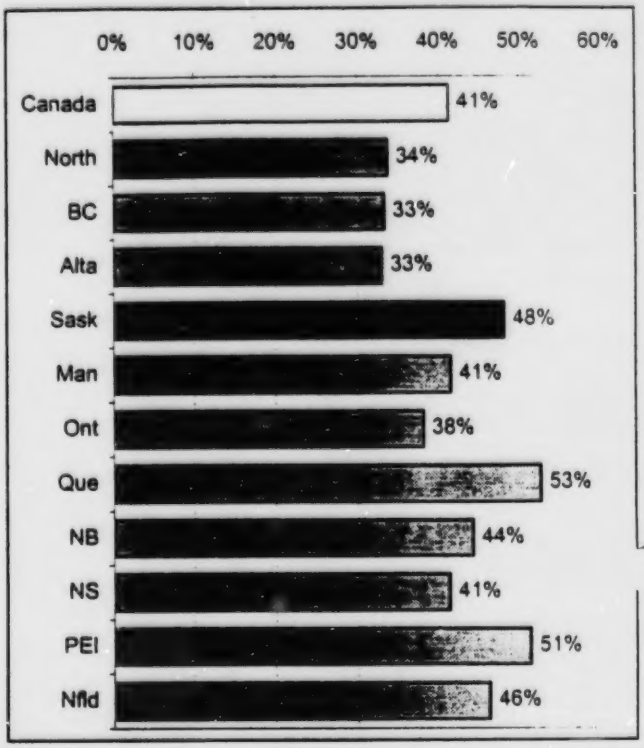


Figure 2.16 shows how the overall proportion of persons educationally qualified as nursing assistants and working in health occupations (48%) compares with the rate in other provinces. Unlike the situation for residents educationally qualified as nurses, Saskatchewan has a relatively high employment rate compared with both its neighbouring provinces and the country as a whole.

Figure 2.16 Proportion of Residents Educationally Qualified as Nursing Assistants and Working in Health Occupations, June 1996



2.3 Interprovincial Migration

There are four sources of data measuring the flow of RNs, RPNs, and LPNs across provincial borders but no readily available data on migration to other countries. Unfortunately, all of these sources have their drawbacks.

1. The census measures interprovincial flows broken down according to the occupation of the migrant but only if they are working in the destination province. These data, besides being somewhat out of date, do not include flows out of the country. And published data from the census are limited to the "health occupation" category which includes physicians and other health professionals as well as RNs/RPNs and LPNs.

2. The Saskatchewan Registered Nursing Association (SRNA) and the Registered Psychiatric Nursing Association of Saskatchewan (RPNAS) track interprovincial and international flows of RNs and RPNs by maintaining administrative records of requests for verification of registration. Besides the fact that they cover only RNs/RPNs registered in Saskatchewan or other provinces, these data may count persons who are thinking of leaving but do not actually do so. No equivalent data are available for LPNs.

3. In 1994, the Canadian Institute for Health Information (CIHI) published RN/RPN data on the province of registration according to the province of education. This produces a reliable picture of long term migration patterns in the years leading up to 1994 but there have been no equivalent data since then that would bring the information up to date or indicate trends. No equivalent data are available for LPNs.

4. The graduate follow-up surveys conducted annually by SIAST measure short-term migration flows. The surveys are done six months after graduation so longer term migration patterns are not available from this source.

Census Migration Data

As part of the census, Statistics Canada records changes in the province of residence from the previous census and from the previous year. These data can be combined with the respondent's current occupation to determine what proportion of those living in other provinces (and working in health occupations in 1996) lived in Saskatchewan in 1991 or 1995. Conversely, the number of those working in health occupations in Saskatchewan in 1996 who lived in another province in 1991 or 1995 can be measured. Table 2.8 summarizes the results; more detail on interprovincial flows are available in Appendix 2.

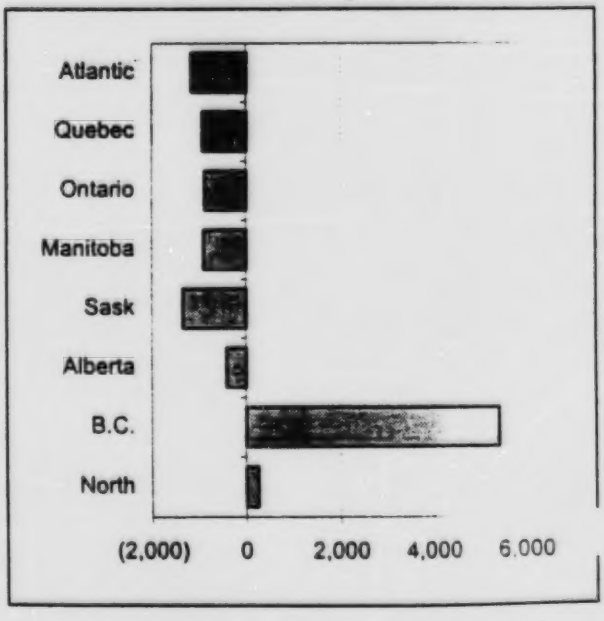
Table 2.8 Inter-provincial Migrants Working in the Health Occupations

Origin or destination province		Incoming to Sask	Outgoing from Sask	Net flow
1991 to 1996	East	750	825	(75)
	Alberta	530	1,155	(625)
	B.C.	235	820	(585)
	North	0	70	(70)
	Total	1,515	2,870	(1,355)
1995 to 1996	East	200	200	0
	Alberta	270	225	45
	B. C.	105	140	(35)
	North	20	10	10
	Total	595	575	20

Source: Statistics Canada Census

From 1991 to 1996, there was a net flow from all of the provinces westward and northward and Saskatchewan was no exception. Over the five years, Saskatchewan lost 625 health workers to Alberta and 585 to B.C. The net outflow over the period averaged 270 persons per year. Flows to and from Saskatchewan to points East of the province were relatively minor and in balance with flows into the province (see Figure 2.17).

Figure 2.17 Net Flow among Persons Employed in Health Occupations, 1991 to 1996



Between 1995 and 1996, however, Saskatchewan was a net recipient of health workers. The main conclusion that can be drawn is that the outflow from 1991 to 1996 was more pronounced in the early part of that five-year period and had, in fact, reversed by the last of those five years.

No conclusions can be drawn about the nursing component of these flows except to note that RNs/RPNs made up 36% of the health occupations in 1996.

SRNA Migration Data

The Saskatchewan Registered Nurses Association keeps track of the number of persons who are registered in other provinces and come to work in Saskatchewan. They also keep track of the number of requests from other provinces to verify registrations for Saskatchewan nurses. These data, from SRNA annual reports, are shown in Table 2.9 and Figure 2.18.

The out-migration numbers may include persons who are thinking of leaving but do not actually do so.

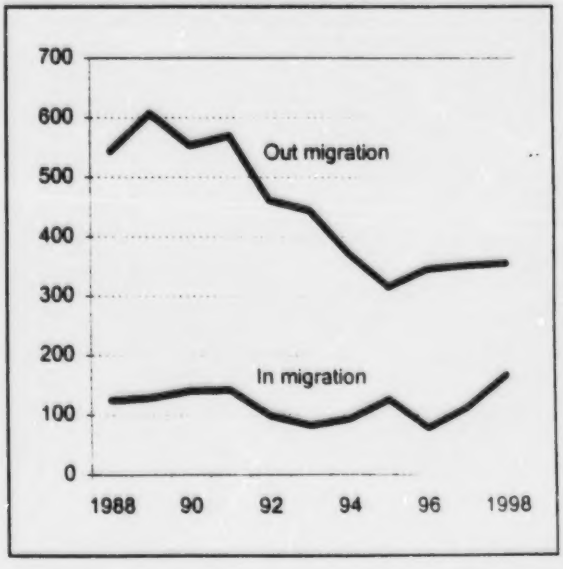
The pattern confirms the observations from the other data sources, namely a decreasing rate of out-migration since the early 1990s. There is also evidence of an upward trend for in-migration since 1996.

Table 2.9 Inter-provincial Registration Data, Saskatchewan Registered Nursing Association

	Incoming to Sask	Outgoing from Sask	Net flow
1988	124	544	(420)
1989	129	607	(478)
1990	140	553	(413)
1991	141	569	(428)
1992	98	461	(363)
1993	82	444	(362)
1994	93	371	(278)
1995	126	315	(189)
1996	78	345	(267)
1997	112	350	(238)
1998	165	353	(188)

Source: SRNA Annual Reports

Figure 2.18 In and Out Migration Figures from SRNA Registrations



RPNAS Migration Data

Although the absolute numbers are much smaller, the reciprocity data from the RPNAS shows a similar pattern. Out migration was higher in the early 1990s and is on a downward trend whereas in-migration is lower and relatively stable (see Table 2.10).

Those who are leaving Saskatchewan are not particularly inclined to be going to Alberta. Of the 88 verifications requested by other associations over the last six years, 29 were from Alberta, 24 were from Manitoba, and 35 were from British Columbia.

Table 2.10 Inter-provincial Registration Data, Registered Psychiatric Nurses Association of Saskatchewan

	Incoming to Sask	Outgoing from Sask	Net flow
1993	3	22	(19)
1994	4	17	(13)
1995	7	18	(11)
1996	1	18	(17)
1997	4	9	(5)
1998	3	4	(1)

Source: RPNAS Annual reports

CIHI Migration Rates

By comparing the province of registration in 1994 with the province of graduation, the 1994 CIHI report measured the long-term effect of migration. In effect, we are measuring where RNs who were still registered in 1994 received their initial education. (More detail on these data are contained in Appendix 3.)

Given Saskatchewan's history of out-migration, it is no surprise that we have exported a significant number of RNs. In fact, 11,727 Saskatchewan graduates were working as RNs in 1994 whereas there were only 9,047 registered RNs working in Saskatchewan. Up to 1994, we had exported, on a net basis, 2,700 RNs. The most common destinations were Alberta and British Columbia (see Figure 2.19).

Saskatchewan also employs RNs who received their education in other provinces. Of the 9,047 RNs working in nursing in 1994, 81% received their initial education in Saskatchewan. The next most common province was Alberta with 6% (see Figure 2.20).

These figures confirm the earlier observations that Alberta and British Columbia are the main destinations for Saskatchewan RNs who migrate to other provinces. The data do not, however, shed any light on recent trends in out-migration.

Figure 2.19 Where Saskatchewan Graduates were Working in 1994 (among those registered as RNs)

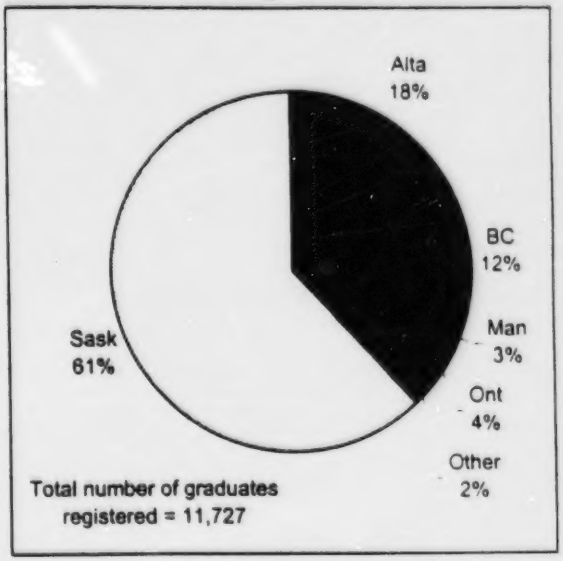
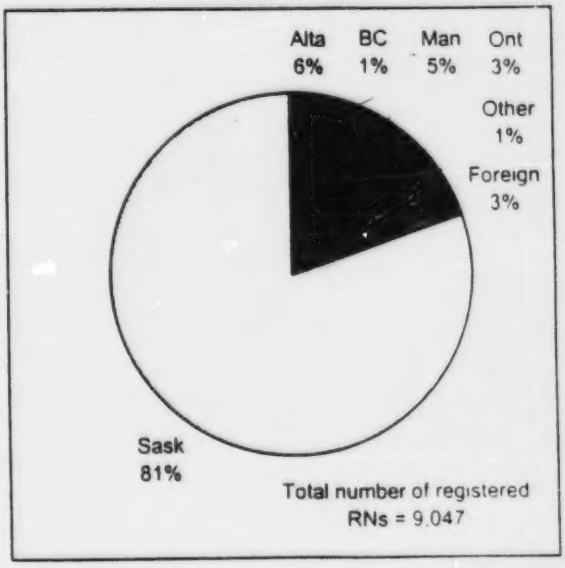


Figure 2.20 Where RNs working in Saskatchewan Received their Initial Education



Graduate Follow-up Surveys

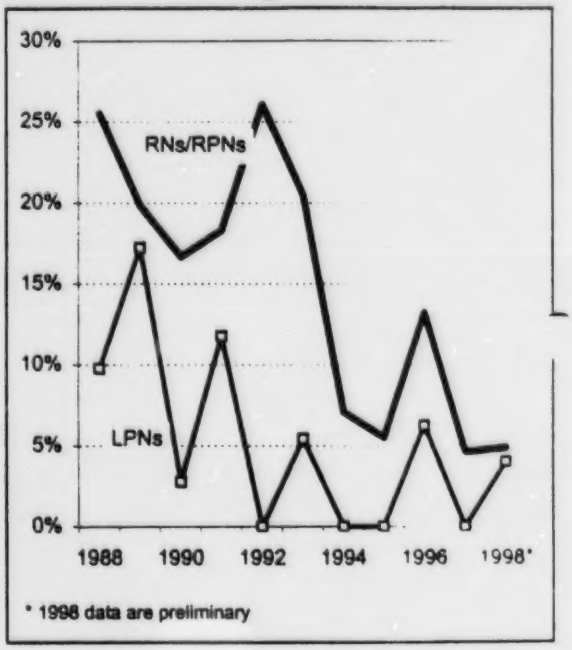
SIAST has conducted graduate follow-up surveys for all of its programs for a number of years and these can be used to measure short-term migration patterns. Because we are measuring the graduate's situation six months after graduation, this is effectively a measure of out-migration immediately following graduation.

Figure 2.20 summarizes the results of these surveys for graduates of the RN/RPN programs and for the LPN program. More detail is provided in Appendix 5.

The pattern of out-migration in these data support the information from the previous sources. Among those who found training-related employment, the proportion working outside the province:

- is generally higher for RNs/RPNs than it is for LPNs; and
- has been on a general downward trend over the last ten years.

Figure 2.21 Proportion of Graduates Working in Training Related Employment Working Outside the Province



Summary

Although there are no conclusive data sources that measure the extent of inter-provincial flows of RNs, RPNs, and LPNs, the information presented here does paint a consistent picture.

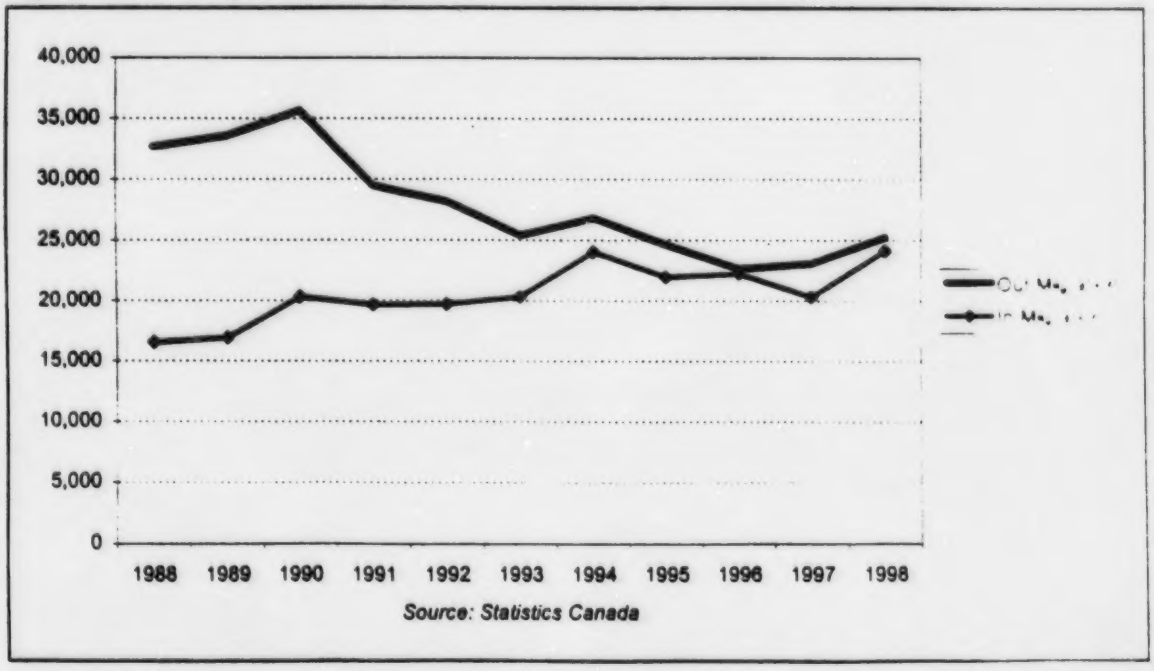
This picture can be summarized as follows:

- net out-migration has declined since the late 1980s and early 1990s; and
- the most common destinations for out-migrants are Alberta and, until recently, British Columbia.

This pattern is consistent with the patterns of inter-provincial migration seen for the province as a whole, namely high levels of net out-migration in the early 1990s and a decline since then (see Figure 2.22). And we also find Alberta and British Columbia being the most common destination for nursing staff moving out of the province, an observation that can also be made for the province as a whole.

In other words, the out-migration of nursing staff may be seen as just another aspect of Saskatchewan's persistent problem of out-migration and not specific to the nursing professions

Figure 2.22 Interprovincial Migration, All Saskatchewan Residents, 1988 to 1998



2.4 Retirement and Attrition

The general supply of nursing staff is increased by the number of persons entering the profession after graduation (see Section 2.1) and reentering it after a period of absence. The supply is decreased by out-migration (see Section 2.3) from the province and by retirements, whether at age 65 or earlier. There is also "attrition" from the professions — persons who leave the profession for other employment.

This section looks at the net effect of these factors with particular emphasis on retirements and attrition. The methodology describes and predicts net flows to and from the professions based on age and historical patterns. Because age-specific data are not available for RPNs, the supply is calculated for RNs/RPNs combined. The base for the model is the number of nurses registered with the SRNA, RPNAS, and the SALPN and who are currently practising. Appendix 3 contains the raw data for RNs; Appendix 4 contains the same data for LPNs.

Methodology

The description of the methodology below applies to RNs/RPNs; the same procedure was used for LPNs.

The calculation starts with the number of practising RNs using the CIHI database in five year age groups over the ten years from 1989 to 1998. Some assumptions had to be made to "clean up" the data:

- those "under 25" were assumed to be 20 to 24 years of age;
- the published data for the "55 plus" age group were allocated to "55-59 age group", the "60-64 age group", and the "65 plus" age group using the ratios of 65%:32%:3% using data from the SAHO payroll, the LPN database which has more age detail, and the Labour Force Survey; and
- those with an "unstated" age (less than 20 per year) were distributed across the age groups proportionately.

For each of the five 5-year intervals available, the number of those in the profession was compared with the number in the profession five years earlier and five years younger. For example

- In 1992 there were 1,062 RNs in the 45 to 49 age group;
- In 1997 there were 957 RNs in the 50 to 54 age group; so
- the "retention rate" for 45 to 49 year old RNs was, therefore, 90% = 957 ÷ 1062 between 1992 and 1997.

This is not a pure retention rate but rather a net retention rate because it is the calculation of the net flow to and from the profession, measuring the combined effect of retention, recruitment, deaths, and retirements. Consequently, the retention rates can be greater than 100%, particularly in the 25 to 34 age group when nurses may reenter the profession after a period of absence for child-rearing.

These retention rates can be examined over time to see if they are stable, increasing, or declining. Three scenarios are then developed based on predicting the retention rate for the next five and ten year periods.

Scenario #1: The retention rates continue to follow the trend established between 1989 and 1998. Because retention rates are generally declining, this is a kind of "worst case" scenario because it forecasts that the situation will continue to worsen.

Scenario #2: The retention rates are stable at the level they were during the 1992 to 1998 period. This is calculated by averaging the rates for the 1992 to 1997 period and the 1993 to 1998 period and is labelled the "status quo" scenario.

Scenario #3: The retention rates return to their highest levels in the 1989 to 1998 period. Because retention rates are generally declining, this is a kind of "best case" scenario because it forecasts a reversal in this trend.

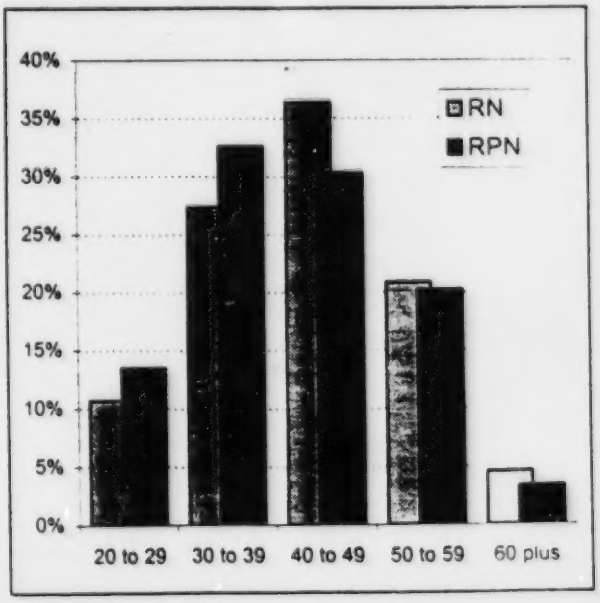
Some "adjustments" to these rates were made by the author based on a case-by-case observation of the patterns.

No equivalent data are available for RPNs so a number of simplifying assumptions were made.

- The same age distribution was assumed for RPNs as for RNs. Figure 2.23 shows that RPNs tend to be somewhat younger so this assumption will have the effect of understating the retention rates.
- The same retention rates were assumed for RPNs as for RNs.

After the retention rates are projected for five and ten years into the future, the methodology involves calculating the number of combined RNs and RPNs who would be in the profession five and ten years into the future under the three sets of assumptions. For illustrative purposes, the model does not assume any new graduates, that is, new

Figure 2.23 Comparison of Age Distributions, RNs and RPNs, 1998 Practising Members



entrants under the age of 25 years of age. We are simply calculating the number of RNs/RPNs required to replace the number who are expected to retire or leave the profession.

The methodology has several implicit assumptions and drawbacks.

- In effect, we are forecasting the number of SRNA/RPNAS registrants, implicitly assuming that they will work the same mix of full-time/part-time/casual hours as do current registrants. In particular, we are not modelling any tendency for hours of work to change with age.
- We are also assuming that the retirement situation does not change, that is, that there are neither more nor fewer incentives to retire before the age of 65. (This is explicitly not the case; Section 2.5 discusses the impact of new early retirement provisions that have recently been put in place.)
- The methodology is not useful for predicting changes at lower ages where changes in, for example, the average age at graduation, can substantially effect the apparent retention rates. Retention rates at lower age groups are neither stable nor predictable.

Retention Rates for RNs/RPNs

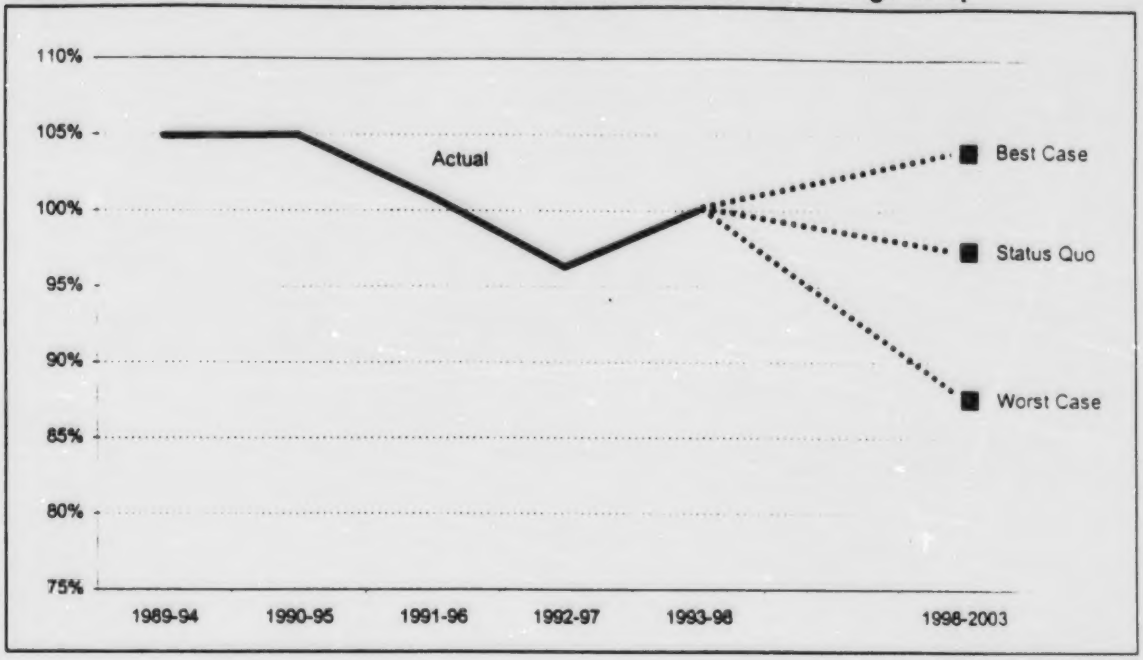
Table 2.11 shows the retention rates (displayed as the proportion of nurses who remain in the profession for another five years) for the five five-year periods for which we have data and for the three scenarios. As a visual aid, Figure 2.24 shows the data for 40 to 44 year olds, one of the critical age groups.

Table 2.11 Retention Rates Calculated for RNs and Assumed for RPNs

Age group at start of period	Retention rates — percent of the age group working in the profession for another five years							
	Actual					Worst Case	Status Quo	Best Case
	1989-94	1990-95	1991-96	1992-97	1993-98	1998-2003	1998-2003	1998-2003
25 to 29	110%	105%	107%	107%	115%	105%	111%	117%
30 to 34	104%	105%	109%	101%	105%	100%	103%	109%
35 to 39	106%	103%	103%	97%	101%	93%	99%	106%
40 to 44	105%	105%	101%	96%	100%	87%	98%	103%
45 to 49	95%	97%	97%	90%	94%	86%	92%	96%
50 to 54	88%	85%	83%	82%	86%	81%	84%	87%
55 to 59	64%	60%	55%	54%	54%	42%	54%	64%
60 to 64	10%	10%	9%	9%	8%	6%	8%	10%

Source: Sask Trends Monitor

Figure 2.24 Actual and Projected Retention Rates, RNs/RPNs, 40 to 44 Age Group



In the "best case" scenario for this age group, the retention rate returns to 103%, near the 105% rate evident from 1989-94 and 1990-95. (This was one of the "adjustments" made by the author referred to earlier; a retention rate of 105% was not considered achievable.) In the "status quo" scenario, the retention rate of 98% is the average of the 100% and 96% rates for 1993-98 and 1992-97. In the "worst case" scenario, the retention rate of 87% is a continuation of the downward pattern from 1989 to 1998.

Projected Supply for RNs/RPNs

When these assumed retention rates for the three scenarios are applied to the population of RNs/RPNs practising nursing in 1998, we arrive at a projected population of practising RNs/RPNs in 2003. If the retention rates are assumed to continue for another five years, the population of practising RNs/RPNs in 2008 can be estimated. The results are shown in Table 2.12. Note that these figures effectively assume no new graduates. The age distribution under the middle, status quo, scenario is displayed graphically in Figure 2.25.

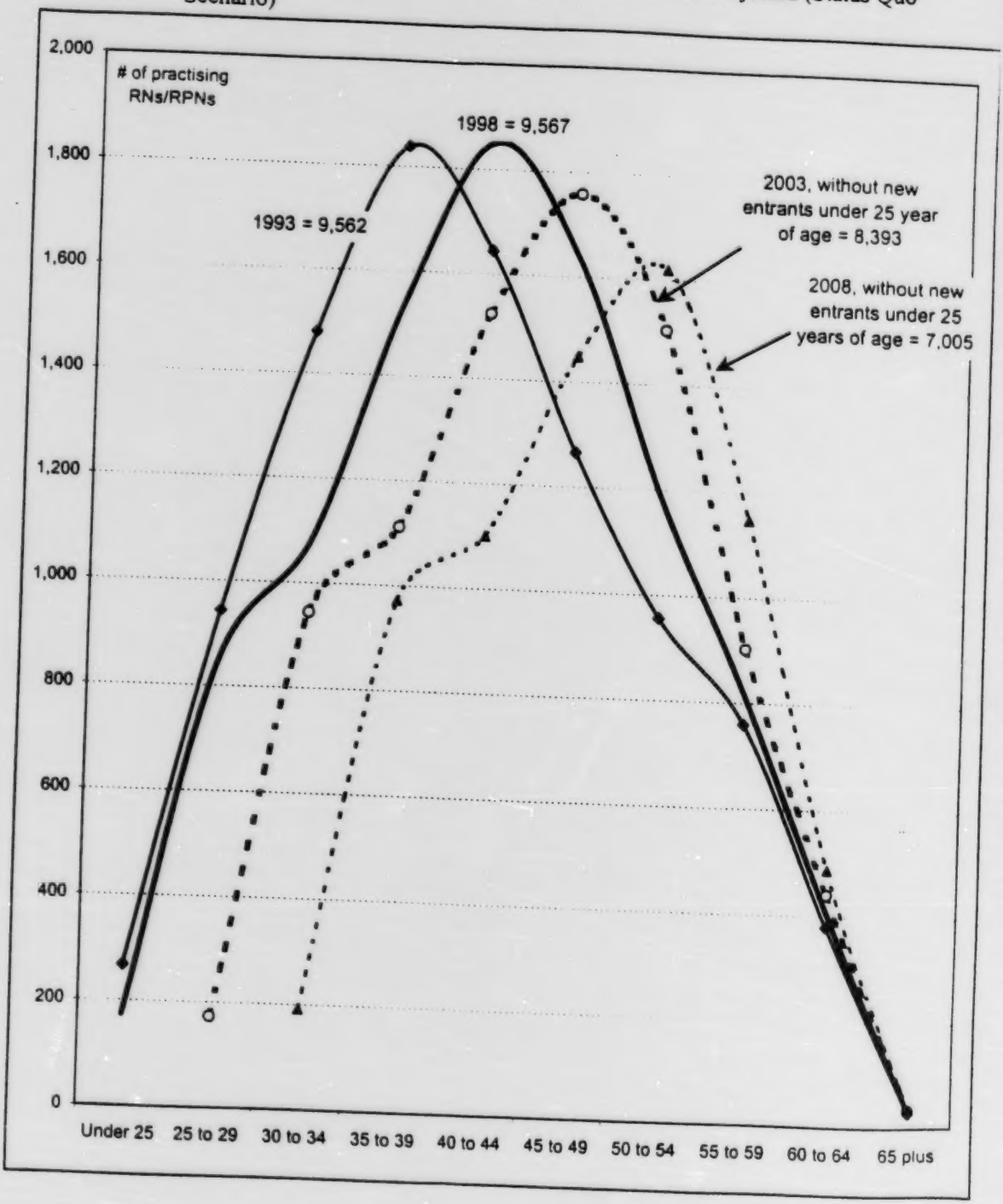
Under the status quo scenario, an average of 207 RNs/RPNs are lost per year between 1998 and 2003 and 256 per year are lost between 2003 and 2008. The situation is much more dramatic in the worst case scenario. The number lost per year is over 300 per year over the next five or ten years. Even under what we have chosen to call the best case scenario, 105 RNs/RPNs per year are lost over the next five years and 186 per year from 2003 to 2008.

Given that the number of new graduates over the next few years is less than 150 (see Section 2.1), it is clear that only retention rates near the "best case" scenario will stop the number of practising RNs/RPNs from declining over the next decade.

Table 2.12 Supply of RNs/RPNs (excluding new graduates), 2003 and 2008

Age group	Number of SRNA/RPNAS members practising nursing						
	Actual 1998	2003 Projection			2008 Projection		
		Worst Case	Status Quo	Best Case	Worst Case	Status Quo	Best Case
Under 30	1,026	173	173	173	0	0	0
30 to 34	1,079	898	944	996	182	192	202
35 to 39	1,540	1,077	1,112	1,174	896	973	1,084
40 to 44	1,851	1,433	1,525	1,632	1,002	1,101	1,244
45 to 49	1,633	1,614	1,759	1,914	1,249	1,488	1,687
50 to 54	1,182	1,396	1,504	1,559	1,380	1,620	1,828
55 to 59	816	952	902	1,029	1,124	1,147	1,357
60 to 64	408	342	441	522	399	488	658
65 or older	31	26	34	40	22	37	51
Total	9,567	7,912	8,393	9,040	6,255	7,005	8,112
Average annual decline since 1998		331	235	105	331	256	1[illegible]

Figure 2.25 Age Distribution of Practising RNs/RPNs, Actual and Projected (Status Quo Scenario)



Retention Rates for LPNs

Table 2.13 shows the retention rates (displayed as the proportion of LPNs who remain in the profession for another five years) for the five five-year periods for which we have data and for the three scenarios. Although the retention rates for LPNs follow the same overall pattern as the ones for RNs, there are some notable differences.

- The rates are generally lower for LPNs than for RNs, suggesting that people are more likely to leave the LPN profession than they are to leave the RN profession.
- The rates are not declining as uniformly or as quickly for LPNs as they are for RNs.

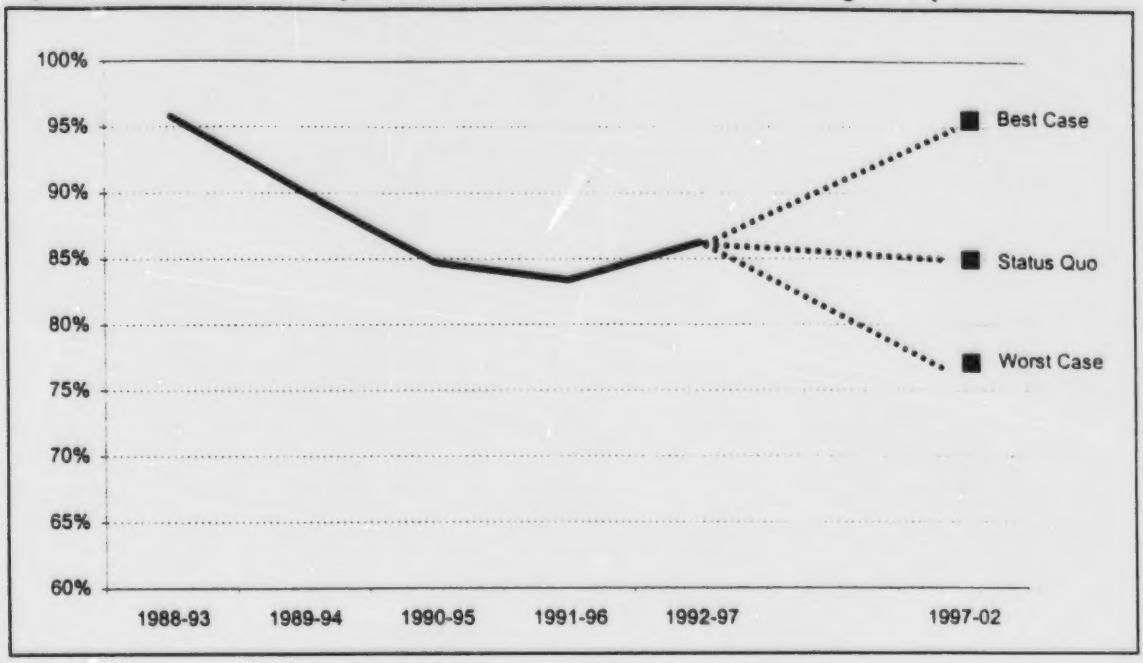
Figure 2.26 shows the data for 40 to 44 year olds, showing the LPN retention rates together with the assumptions for the three scenarios.

Table 2.13 Retention Rates for LPNs

Age group at start of period	Retention rates — percent of the age group working in the profession for another five years							
	Actual					Worst Case	Status Quo	Best Case
	1988-93	1989-94	1990-95	1991-96	1991-97	1997-2002	1997-2002	1997-200
25 to 29	83%	78%	76%	86%	85%	76%	85%	86%
30 to 34	86%	81%	82%	78%	79%	69%	79%	86%
35 to 39	90%	85%	85%	89%	88%	84%	88%	90%
40 to 44	96%	90%	85%	83%	86%	77%	85%	96%
45 to 49	91%	90%	81%	82%	80%	69%	81%	91%
50 to 54	91%	78%	76%	75%	78%	65%	77%	77%
55 to 59	54%	43%	47%	42%	38%	20%	40%	54%
60 to 64	15%	21%	11%	14%	15%	10%	15%	15%

Source: Sask Trends Monitor

Figure 2.26 Actual and Projected Retention Rates for LPNs, 40 to 44 Age Group



Projected Supply for LPNs

When these assumed retention rates for the three scenarios are applied to the population of practising LPNs in 1997, we arrive at the projected population of practising LPNs in 2002 and 2007. The results are shown in Table 2.14. Note that these figures effectively assume no new graduates.

Under the status quo scenario, an average of 90 LPNs per year are lost between 1997 and 2002 and 86 per year are lost between 2002 and 2007. The situation is much more dramatic in the worst case scenario which shows the number lost per year averages 115 over the next ten years. Even under what we have chosen to call the best case scenario, 64 LPNs per year are lost over the next five years and 72 per year from 2002 to 2007. The age distribution, actual and projected, of practising LPNs is shown graphically in Figure 2.27.

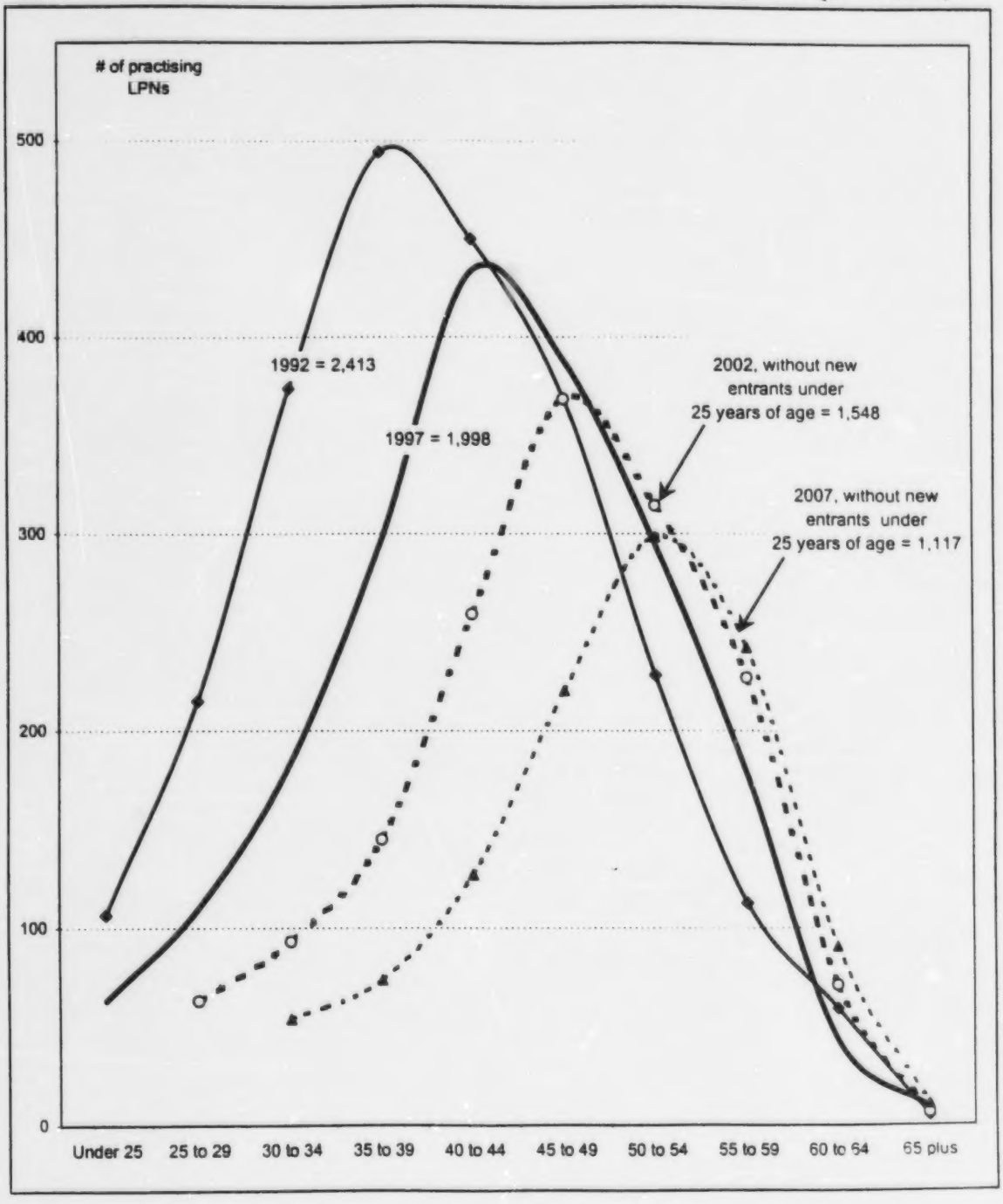
Given that the number of new graduates over the last few years has ranged from 40 to 64 (see Section 2.1), it is clear that even with retention rates near the "best case" scenario, the number of LPNs will decline over the next five years unless a significant number are trained or recruited.

Table 2.14 Supply of LPNs (excluding new entrants under 25 years of age), 2002 and 2007

Age group	Number of SLPNA practising members						
	Actual 1997	2002 Projection			2007 Projection		
		Worst Case	Status Quo	Best Case	Worst Case	Status Quo	Best Case
Under 30	173	63	63	63	0	0	0
30 to 34	183	83	93	94	48	54	54
35 to 39	296	126	145	157	58	74	81
40 to 44	433	249	259	285	106	127	141
45 to 49	388	335	368	416	192	220	254
50 to 54	295	268	314	353	231	298	379
55 to 59	178	190	227	227	173	242	272
60 to 64	43	36	71	96	38	91	123
65 or older	9	4	7	6	4	11	14
Total	1,998	1,355	1,548	1,679	850	1,117	1,319
Average annual decline from 1997		133	90	64	101	86	72

Source: Sask Trends Monitor

Figure 2.27 Age Distribution of Practising LPNs, Actual and Projected (Status Quo Scenario)



2.5 Other Factors Affecting Supply

There are a number of factors other than those considered in Sections 2.1 through 2.4 that could affect the supply of RNs, RPNs, or LPNs in the short term. This section looks at some of the factors that have been considered and comments, in a qualitative way, on what their impact may be on the future supply.

"Nursing Shortage"

Besides the high profile "nursing shortage" in Saskatchewan, there are numerous reports of a nation-wide or even world-wide shortage of nurses. These reports, regardless of their accuracy, will have a positive effect on recruitment because students can choose nursing as a career knowing that they have a "guaranteed" job.

Educational Requirements

The changeover from a two-year diploma program to a three-year diploma/four-year degree program for RNs/RPNs has already had a detrimental affect on the supply of nurses in Saskatchewan and it will continue to do so for the short term.

The additional cost of obtaining a nursing education will have a dampening effect on applications over the long term. Uncertainty surrounding the entry to practise requirements may also be inhibiting NEPS applicants.

The additional educational requirements for RNs/RPNs could, on the other hand, make the shorter LPN certificate program more attractive for some students.

Pension Plan

Just prior to this study, SAHO and the health unions agreed to several pension plan improvements including the removal of the minimum age requirement of 55. An actuarial analysis suggests that an additional 7.5% of plan members in the 48 to 54 age group will be eligible for early retirement.

The potential effect of this change was examined by decreasing the retention rates in the appropriate age groups for RNs/RPNs. In the "status quo" option described in Section 2.4, the number of RNs/RPNs declined by 235 per year from 1998 to 2003 without considering the effect of the early retirement provision (see Table 2.12). The decline increases to an estimated 265 per year if all eligible members chose the early retirement option.

Wage Rates

Almost all of the health care unions in Saskatchewan and Canada were involved in collective bargaining during the course of this study. There may be significantly different pay rates in effect for the next five years and significantly different differentials between Saskatchewan rates and those in neighbouring provinces. SAHO and the health sector unions have also agreed to develop a new job evaluation plan based on the principles of pay equity. Wage adjustments under the new pay equity plan will add an estimated 8% to 12% of payroll to wage rates in collective agreements.

The higher wage rates from collective bargaining and pay equity will have a positive effect on retention/recruitment whereas higher differentials between Saskatchewan and Alberta would have a smaller, but negative effect on retention. The promise of higher rates may also mitigate some of the effect of the change in the retirement age as those who are eligible may wait for several years in order to improve the dollar value of their pensions.

Retention Rates

The forecast of retention rates in Section 2.4 implicitly assumes no variation in the mix of full-time and part-time staff. Although this is primarily a demand-side issue, the availability of appropriate hours of work would improve recruitment/retention. In particular, older nurses my be more desirous of fewer hours of work and younger nurses may be more desirous of longer hours. If these are available, people may be more inclined to re-enter or stay in the profession.

Recruitment

There is a large pool of persons who are educationally qualified as RNs/RPNs or LPNs who are not working in the profession (see Section 2.2). Improved wage rates or working conditions may be attractive to those who are working in other occupations. Some of those educationally qualified as RNs/RPNs, however, will have been out of nursing long enough to require re-entry training before returning to the profession.

3.0 DEMAND FOR NURSING STAFF

This section looks at the nature of the demand for RNs, RPNs, and LPNs and how it has changed over the last ten years. There are current data available describing the type of work nurses are doing, the types of employers they work for, and the employment income they receive. A particularly important issue, the trend in part-time/casual work, is also addressed to the extent possible using existing data sources.

The first section deals with the overall level of demand in Saskatchewan, that is, the number of practising RNs, RPNs, and LPNs in the province.

3.1 Basic Counts

The most reliable sources of information about the absolute number of RNs, RPNs, and LPNs working in the province are the administrative databases for the professional associations — the Saskatchewan Registered Nursing Association (SRNA), the Registered Psychiatric Nursing Association of Saskatchewan (RPNAS), and the Saskatchewan Association of Licensed Practical Nurses (SALPN).

RNs

In the case of RNs, new and renewal registration data collected by the organization is forwarded to the Canadian Institute for Health Information (CIHI) which acts as a clearing house for registration data across Canada. A number of edit checks are performed on the database including a procedure that removes most duplicates arising from registrations in more than one province. These data represent the number of RNs in the province during the first six months of the renewal period for the year in question. That is, 1998 data represent the number of RNs registered as of April 30, 1998. More detail from the CIHI database is available in Appendix 3.

On a per capita basis, Saskatchewan has an average number of RNs registered in the province. Figure 3.1 shows that there are 8.5 RNs per 1000 population compared with the national average of

Figure 3.1 RN Registrations per 1000 Population by Province, 1998

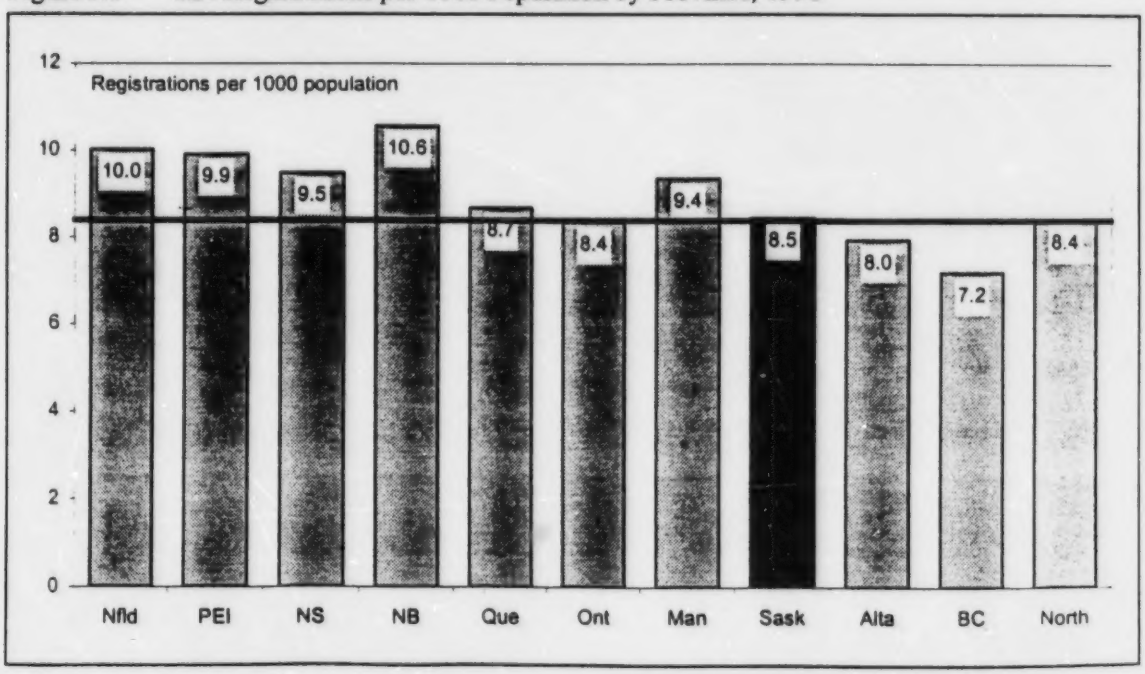
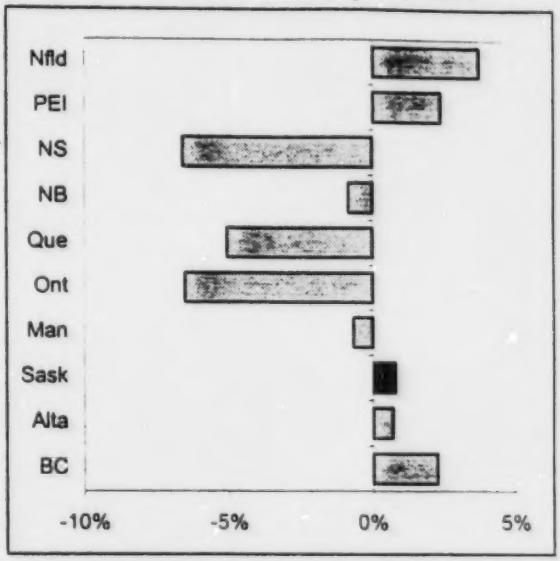


Figure 3.2 Registrations and Employment, Saskatchewan RNs

Figure 3.3 Change in the Number of RNs, 1993 to 1998, by Province



8.4 per 1000 persons[1]. The number of registrations per capita is noticeably higher in the Atlantic provinces and Manitoba and lower in Alberta and British Columbia.

In spite of all of the changes to the health care delivery system in the last decade, the number of RNs registered in Saskatchewan and working in nursing has been effectively flat since 1993 (see Figure 3.2) at just under 8,500 persons[2].

This level of stability is not common in Canada; Figure 3.3 shows the rate of growth in other provinces from 1993 to 1998. The number of practising RNs has fallen by 3.4% in Canada, largely because of significant declines in Ontario and Quebec. Several provinces show rates of increase in excess of Saskatchewan's growth rate of 0.8% including British Columbia, Newfoundland, and Prince Edward Island. The number of RNs working in the Northern Territories has increased by 50% over the five years even though only 0.3% of RNs in Canada work in the North.

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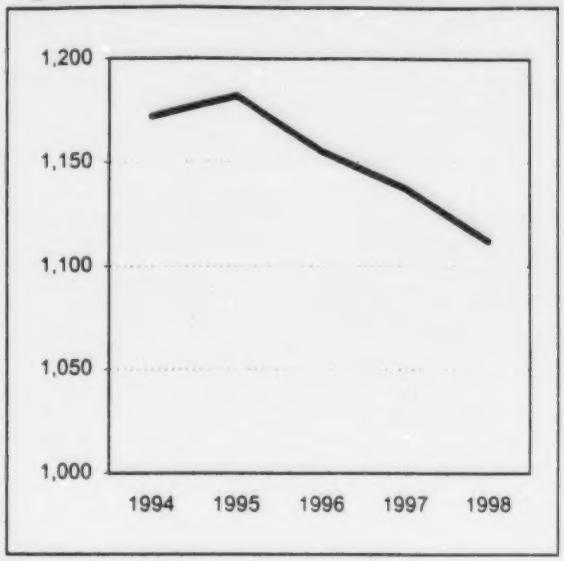
1 Press reports showing that Saskatchewan had an above-average number of RNs were based on questionable data released by CIHI. That per capita calculation was based on the number of RNs registered and employed in nursing but 5% of respondents (almost all of whom were registered in Quebec and Ontario) had an "unknown" employment status. CIHI assumed these respondents were not employed in nursing so this artificially lowered the per capita counts in Quebec and Ontario and therefore, Canada. To ensure comparability across provinces, Figure 3.1 calculates only the registrations per capita.

2 The employment spike in 1992 is thought to be an artifact of changes in the registration period which had the effect of moving the measurement date from June to April.

RPNs

Data from the RPNAS annual reports show a steady but slow decline in the number of practising RPNs in the province (see Figure 3.4). From 1994 to 1998, the number of practising RPNs declined from 1,172 to 1,112.

Figure 3.4 Practising Members, RPNAS



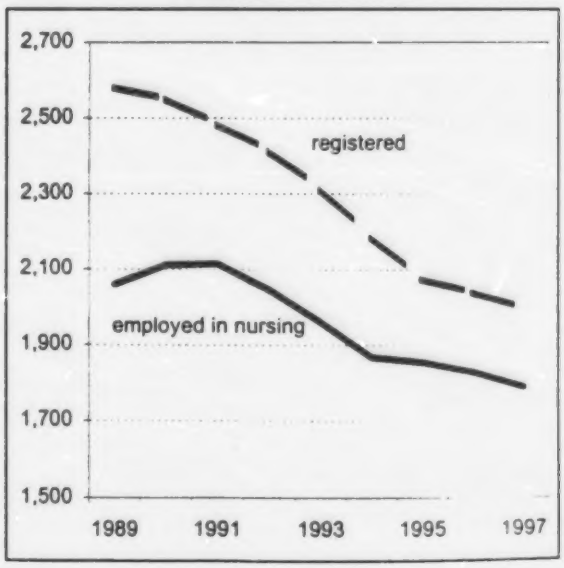
LPNs

There is no central database of Licensed Practical Nurses in Canada; the data included here were obtained directly from the SALPN database in Saskatchewan. Final figures for 1998 were not available at the time this report was prepared so the data end in 1997. More detail from the LPN database is contained in Appendix 4.

As with RPNs, the number of LPNs working in nursing in Saskatchewan has declining steadily since 1991 (see Figure 3.5).

The proportion of registrants who are working in nursing is much lower than for RNs although the difference is narrowing. In 1997, 72% of registrants were working in nursing compared with 65% in 1989 and 95% among RNs.

Figure 3.5 Registrations and Employment, Saskatchewan LPNs



3.2 Job Types and Employer Types

Data are generally available for RNs, RPNs, and LPNs on the type of employer, the area of responsibility, and the type of position held. These are based on check boxes on the registration forms so the terms are effectively self-defined.

3.2.1 Registered Nurses

In the previous section we noted that the number of RNs working in Saskatchewan has been effectively flat for the last five years. There have, however, been changes in the type of work they do and the kinds of employers they work for. The CIHI database is the source for the data in this section.

Position

Over the last five years, the number of RNs working in managerial and supervisory has been declining. Table 3.1 shows that the number working in these kinds of positions has declined by 20% largely because there are fewer working in Director or Assistant Director positions. The number working in staff or community positions, the largest category by far, has increased by 4%.

The largest increase has occurred among those who are working outside the acute care system. From 1993 to 1998, the number of nurses in office or industrial settings, or working as instructors, researchers, or consultants has more than doubled. This is still a relatively small (less than 10%) component of nursing but an increasingly important one.

Table 3.1 Positions Held by RNs, Saskatchewan

		1993	1998	Change
Managerial and supervisory	Director or Asst. Director	381	280	-27%
	Supervisor	403	400	-1%
	Head Nurse	227	228	0%
	Subtotal	1,011	808	-20%
Staff	Staff or community	6,286	6,521	4%
	Clinical specialist	40	48	20%
	Subtotal	6,326	6,570	4%
Office, industrial, instructor, research, consultant		321	725	126%
Total of valid responses		**7,658**	**8,202**	**7%**
not stated		732	253	...
Total		8,390	8,455	1%

Source: CIHI database

In 1998, 80% of Saskatchewan RNs were working in staff positions. This compares with the national average of 77%.

Area of Responsibility

The SRNA registration form asks RNs to report on their area of responsibility. Responses to that question are summarized in Table 3.2. As with the data on position, the breakdown by area of responsibility shows the increase in the number of RNs working outside direct patient care — in research, consulting, or teaching positions. But Table 3.2 also shows the increase in the number working outside the acute care system. From 1993 to 1998, the number working in the combined categories of home care, community health, ambulatory care and occupational health has increased by 68%.

There are also more RNs working in the critical care areas (OR, Emergency, Critical Care) than there was in 1993. The number increased by 15% between 1993 and 1998.

Although they still represent one out of four RNs, there are fewer working in "traditional" hospital ward settings — medical/surgical, paediatric, and maternal units. In their place, there are more working in geriatric and psychiatric units.

Finally, we see a decline in the number of RNs who reported working in "several" or "other patient care" areas, possibly an indication that the flux in the workplace has diminished somewhat since 1993.

Table 3.2 Areas of Responsibility, Saskatchewan RNs

	1993	1998	Change
Medical/surgical	1,730	1,558	-10%
Paediatric	318	256	-19%
Maternal	422	401	-5%
Subtotal	2,470	2,215	-10%
Psychiatric	139	165	19%
Geriatric	1,256	1,306	4%
Subtotal	1,395	1,471	5%
Community health	363	588	62%
Ambulatory care	56	91	63%
Home care	290	539	86%
Occupational health	75	100	33%
Subtotal	784	1,318	68%
Operating room	259	333	29%
Emergency	267	333	25%
Critical care	632	666	5%
Subtotal	1,158	1,332	15%
Several	1,226	796	-35%
Other patient care	503	428	-15%
Subtotal	1729	1,224	-29%
Teaching/admin/ research	524	788	50%
Total valid responses	8060	8348	4%
Not stated	330	107	
Total	8,390	8455	0.8%

Source: CIHI database

Saskatchewan RNs have moved significantly to community health and home care areas over the past few years. Figure 3.6 compares the percentage of RNs working in these two areas in Saskatchewan with the proportion in other provinces.

Figure 3.6 Proportion of RNs Working in Home Care/Community Health, by Province

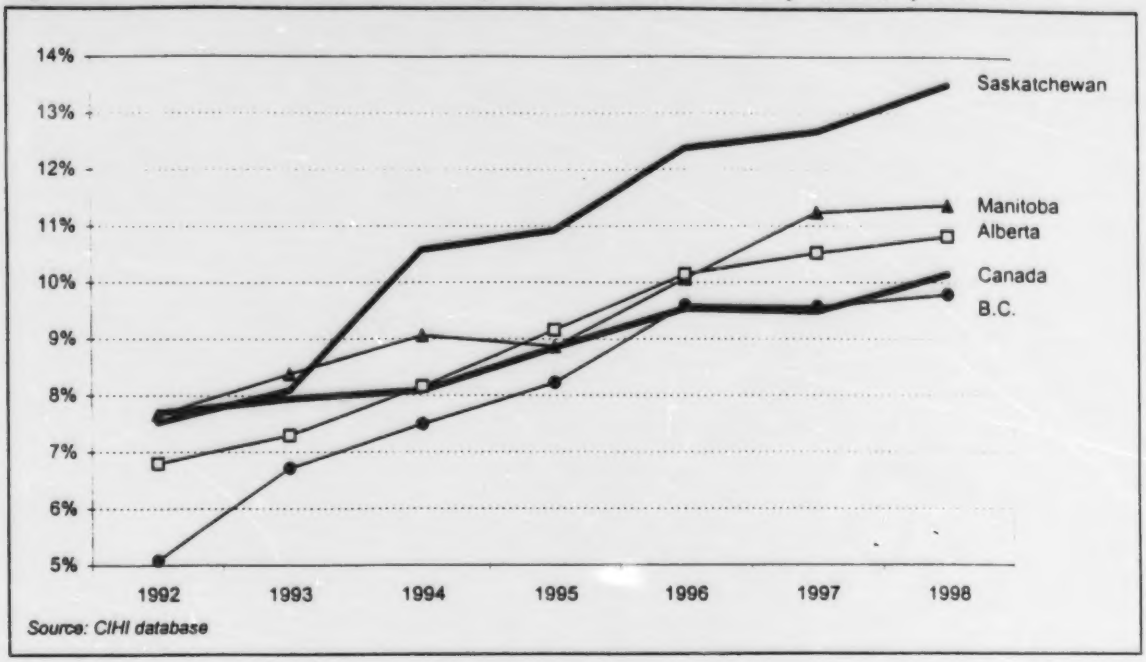
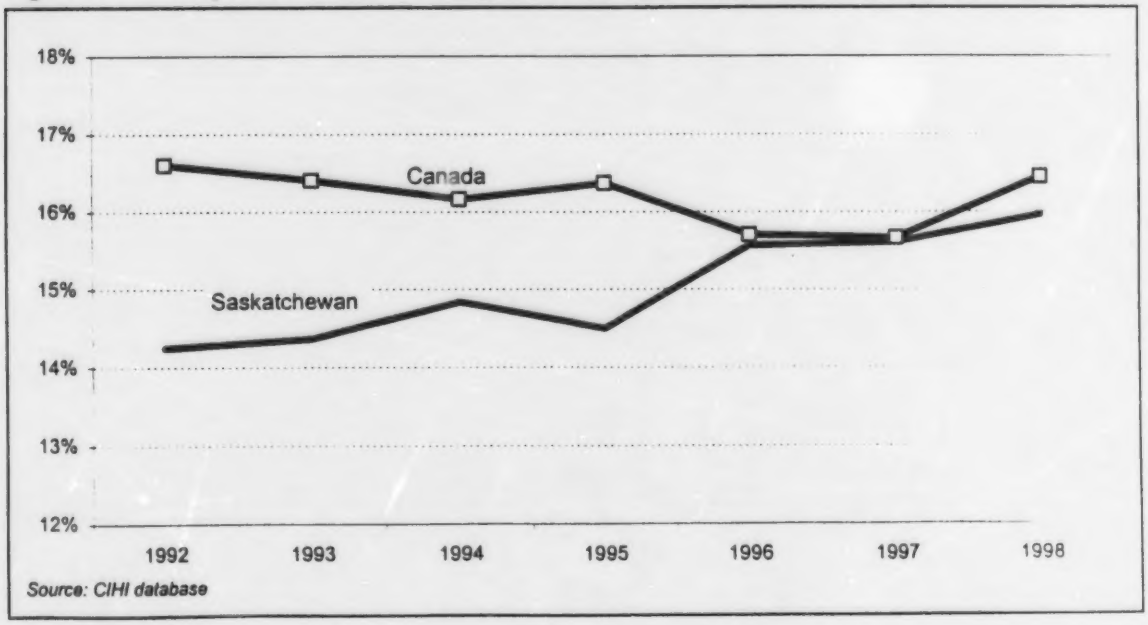


Figure 3.7 Proportion of RNs Working in Critical Care Units, Canada and Saskatchewan



In 1992 and 1993, 8% of RNs worked in community health/home care, the same proportion as in the country as a whole. By 1998, the proportion had increased to 13.5% whereas the national average had increased to only 10% (see Figure 3.6). Over the same period, the proportion of RNs working in the critical care units increased to 16% — nearly the same proportion as in Canada as a whole (see Figure 3.7).

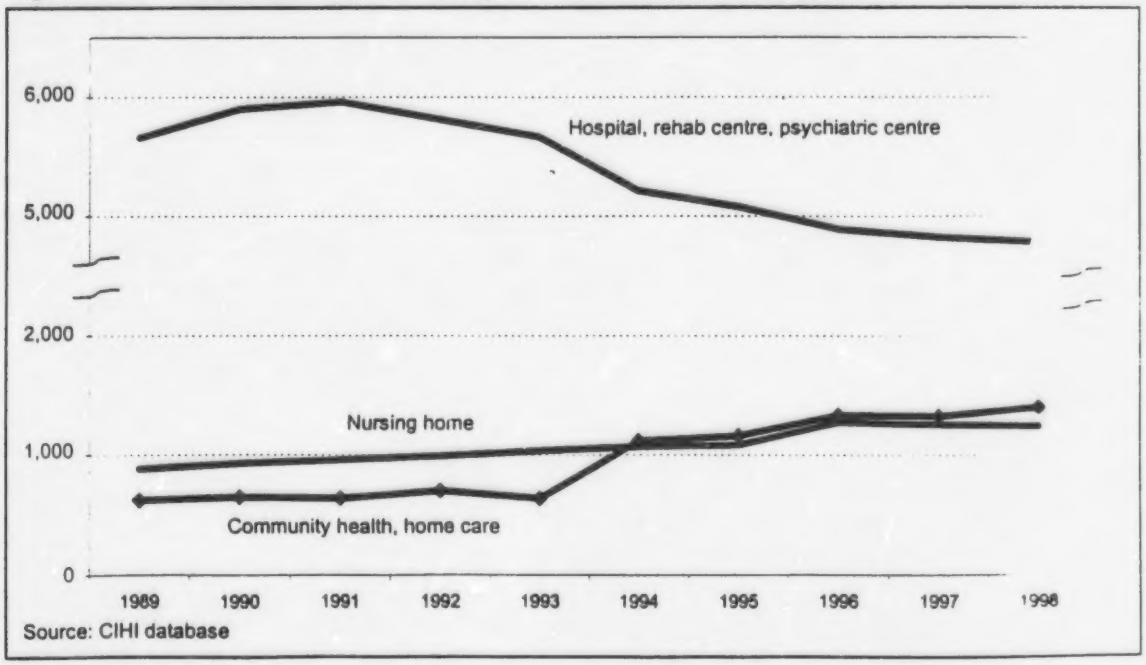
Employers

A section in the SRNA registration form asks registrants to indicate their place of work by checking off a list of employer categories. The advent of the health districts makes interpretation of this question problematic because it isn't clear how registrants would report their employer if they are working in a number of different settings for the same health district; some may still consider that as working for different employers.

Notwithstanding this difficulty, the responses clearly show RNs working less in facilities — hospitals, rehabilitation and psychiatric centres — and more in community health and home care (see Figure 3.8). In spite of this trend, over one half (58%) of RNs still work in hospitals, rehabilitation centres, and psychiatric centres.

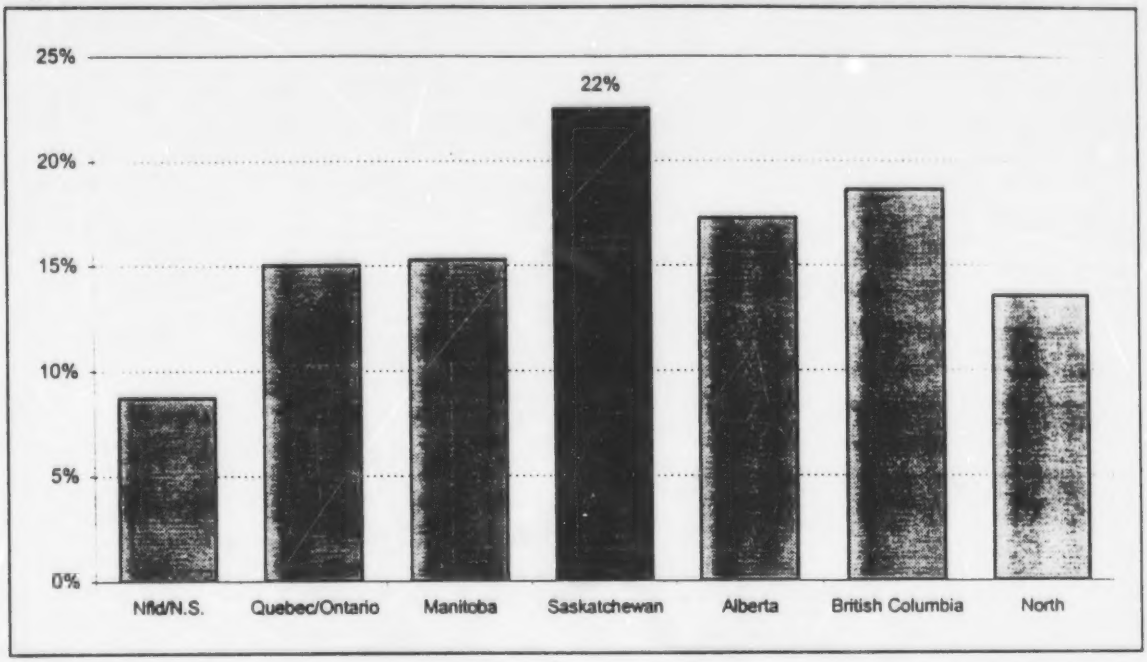
In the last few years, the CIHI report has also published data on the number of RNs who are

Figure 3.8 Saskatchewan RNs working in Selected Employer Categories



working for more than one employer. Almost one in four (22%) Saskatchewan RNs reported working for more than one employer in 1998 and the percentage has risen from 17% in 1996 and 21% in 1997. The proportion in Saskatchewan is much higher than in other provinces (see Figure 3.9).

Figure 3.9 Proportion of RNs Working for More Than One Employer, 1998, by Province



3.2.2 Registered Psychiatric Nurses

The annual reports from the RPNAS have data on the nature of RPN employers, positions held and primary practise area. Only recent data were available for this report.

The picture presented in Table 3.3 is mixed. There are more RPNs working in hospital and health centres and in community services and NGOs but fewer working in special care homes and for government. The number working in the acute care practice area has declined only slightly whereas the number working in rehabilitation or geriatrics has declined more substantially. And more are working as counsellors/therapists and fewer are working in director or manager positions.

Overall, there is only slight evidence that the trend to community based service delivery that is so prevalent among RNs is also occurring among RPNs.

Table 3.3 Employment Characteristics, Saskatchewan RPNs

		1995	1998	Change
Employers	Hospital/Health centre	320	380	19%
	Special care home	280	242	-14%
	Government	343	223	-35%
	Community service	84	108	29%
	Non-gov't agency	52	69	33%
	Other	76	68	-11%
	Unassigned	125	106	-15%
Total		1,280	1,196	-7%
Primary practice area	Geriatrics	332	306	-8%
	Acute care	251	249	-1%
	Mentally handicapped	170	142	-16%
	Rehabilitation/ vocational	120	109	-9%
	Administration/ education	42	37	-12%
	Other	240	247	3%
	Unassigned	125	106	-15%
Total		1,280	1,196	-7%
Position description	Staff	766	723	-6%
	Director, manager, supervisor	168	140	-17%
	Community worker	91	92	1%
	Educator/staff development	31	18	-42%
	Counsellor/ therapist	65	85	31%
	Other	34	32	-6%
	Unassigned	125	106	-15%
Total		1,280	1,196	-7%

Source: RPNAS annual reports

3.2.3 Licensed Practical Nurses

In Section 3.1 we noted that the number of LPNs has been declining steadily in the 1990s. In this section, we look at the different employers and areas of responsibility for LPNs over this period. The SALPN registration database is the source for this information and is described in more detail in Appendix 4.

Area of Responsibility

The SALPN registration form asks LPNs to report on their area of responsibility. Responses to that question are shown in Table 3.4.

In 1997, two thirds of the LPNs were working in medical/surgical units, geriatric units, or rural hospitals but the number in each of these areas is declining. The two areas where there are more LPNs than in 1992 are psychiatric units and urban hospitals. The number working in community health is small and has been stable from 1992 to 1997.

Table 3.4 Areas of Responsibility, Saskatchewan LPNs

	1992	1997	Change
Medical/surgical	620	481	-22%
Paediatric/maternity	192	127	-34%
Psychiatric	22	27	23%
Geriatric	440	306	-30%
Community health	81	80	-1%
Rural hospital (various areas)	448	412	-8%
Urban hospital (various areas)	91	138	52%
Other, not stated	519	427	-18%
Total	2,413	1,998	-17%

Source: LPNAS database

Employer Type

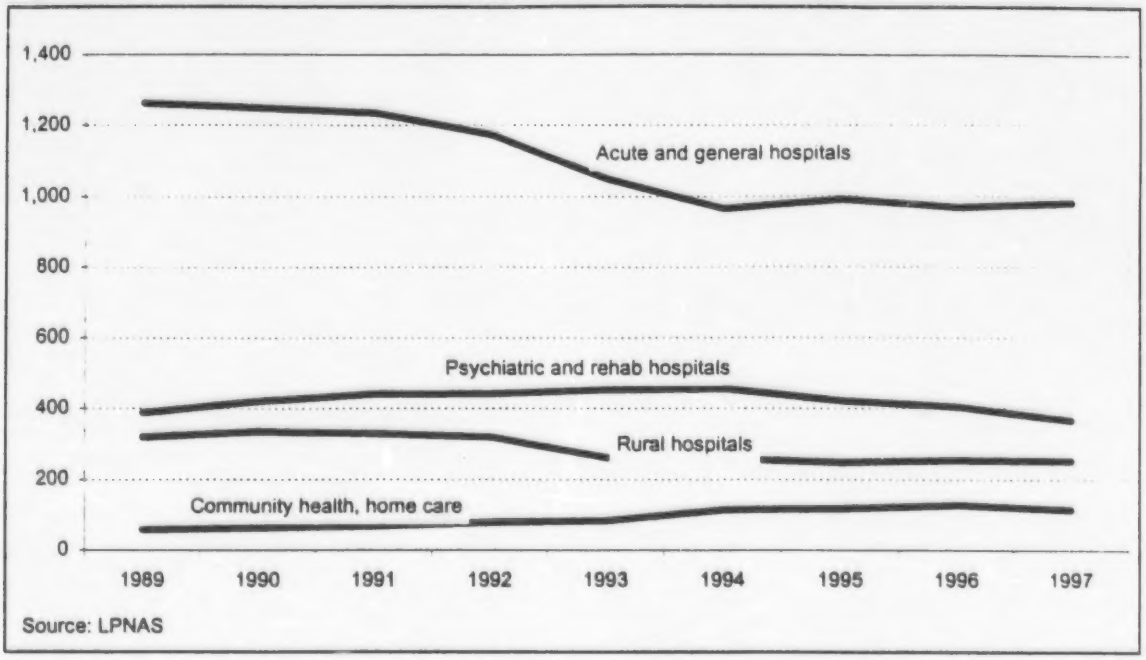
Table 3.5 and Figure 3.10 show that the number of LPNs working for acute/general hospitals, the largest employer group for LPNs, declined substantially to 1994 and has been relatively stable since then. The number working in the second largest employer group, nursing homes, has also declined in the last few years. The number working in rural hospitals and community health/home care is relatively small although the latter category is the only one showing growth from 1992 to 1997.

Table 3.5 Employer Category, Saskatchewan LPNs

	1992	1997	Change
Acute and general hospitals	1,172	982	-16%
Rural hospitals	319	252	-21%
Extended care, nursing homes, rehab and psychiatric centres	442	366	-17%
Community health/home care	79	114	44%
Other, not stated	401	284	-29%
Total	2,413	1,998	-17%

Source: LPNAS database

Figure 3.10 Saskatchewan LPNs Working in Selected Employer Categories



3.3 Wage Rates

There are two sources of wage rates and employment earnings examined in this section — the hourly rates from collective agreements, and the average earnings per week.

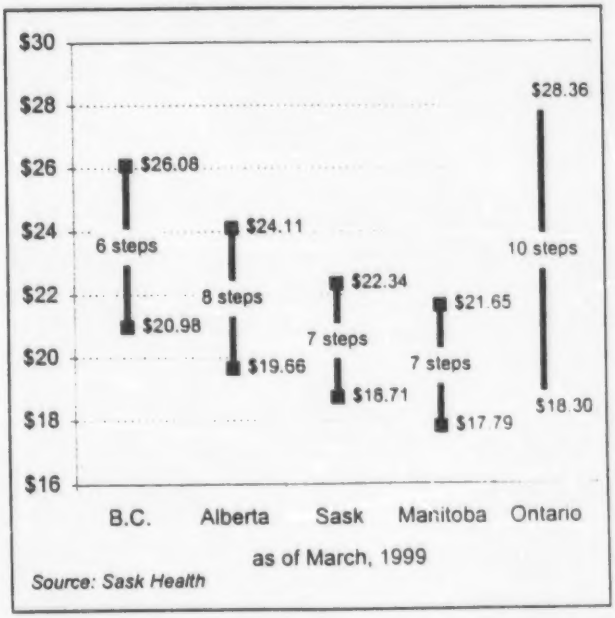
The vast majority of RNs, RPNs, and LPNs in the province are union members, typically with the Saskatchewan Union of Nurses (SUN), the Service Employees International Union (SEIU), or the Canadian Union of Public Employees (CUPE). Collective agreement rates measure the wage rates for the majority of nurses although there is no indication of where in the negotiated wage scales that they are positioned.

Earnings data, on the other hand, are based on payroll records submitted to Revenue Canada (published as the Survey of Employment, Payroll and Hours (SEPH) by Statistics Canada) and so measure gross earnings including overtime. Earnings data are employer-based and so provide no detail for specific occupations.

SUN Collective Agreement Rates

At the time that this research was conducted, almost all of the unions representing nurses in Canada were in the midst of collective bargaining so these data will soon be out of date. The data summarized in Figure 3.11 were provided by Saskatchewan Health.

Figure 3.11 Collective Agreement Rates for General Duty Nurses, Selected Provinces



The differential between Alberta and Saskatchewan is 8% at the upper end of the RN wage scale and 5% at the lower end. Persons transferring from Saskatchewan to other jurisdictions may not retain all of their seniority and there are significant cost-of-living differences between Saskatchewan and the provinces paying higher rates so the current wage structures may not provide much incentive for RNs who are already working in Saskatchewan.

However, these wage rates (and undoubtedly those in the US) will have an impact on those who are newly graduated or

who are looking for work in the province and cannot find it.

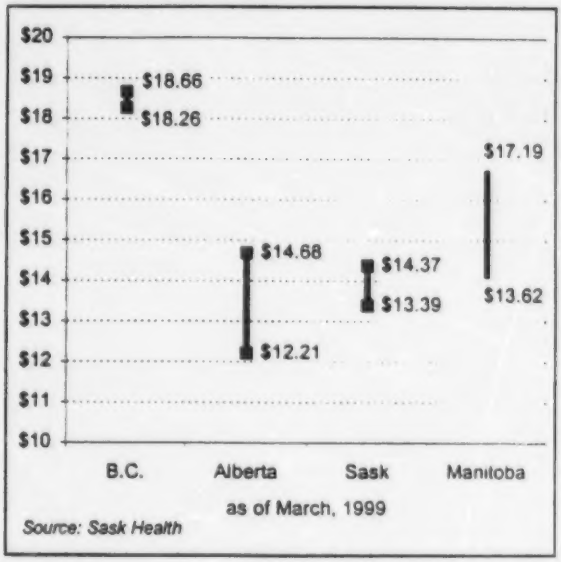
There may be an economic incentive for existing RNs to move if current rates change significantly during the collective bargaining that was occurring as this research was being conducted. The inter-provincial differentials may also change when the Saskatchewan job evaluation plan based on the principles of pay equity is implemented.

LPNs

The collective agreement rates for LPNs have a different pattern than for RNs. Alberta rates are similar rather than higher and Manitoba rates are higher rather than lower. The British Columbia rates are compressed and noticeably higher.

As with RNs, these rates are the subject of current negotiations and could change dramatically in the latter part of 1999. The data summarized in Figure 3.12 were provided by Saskatchewan Health.

Figure 3.12 Collective Agreement Wage Rates for LPNs, Selected Provinces



Average Weekly Earnings

The Survey of Employment, Payrolls, and Hours (SEPH) provides data based on monthly payroll records remitted by employers to Revenue Canada. As such it has several limitations:

- earnings and employee counts are included only for paid employees, that is, not for the self-employed unless they pay themselves a wage/salary in an incorporated business;
- only gross payrolls and number of persons are included in the data so average earnings are affected by the mix of full-time/part-time/casual staff and by the number of hours worked by part-time staff; and
- the data are classified by employer group rather than occupation and so include all employees, not just nursing staff.

In spite of these difficulties, SEPH does provide current, reliable, data on aggregate payrolls in the health sector including a breakdown into regular earnings and overtime earnings. The average earnings figures, however, need to be placed in context. The employer groupings from SEPH that are relevant to this study are:

- **Hospitals**; including general and psychiatric hospitals;
- **Other Institutional Health and Social Services**; Special care homes, homes for the physically or mentally handicapped, orphanages, special care homes and homes for single mothers or disturbed children; and
- **Non-institutional Health Services**; Ambulance services, drug/alcohol treatment programs, out-patient rehabilitation clinics, home care services, public health clinics, and community health centres.

Table 3.6 contains a summary of 1998 SEPH data for Saskatchewan — more detail is provided in Appendix 7.

According to the SEPH data, these three employer groups employed an average of 39,000 persons in 1998 with an annual payroll of $894 million. The largest group is the hospital sector although the non-institutional health services sector has grown the most quickly since 1993 (see Figure 3.10). Average earnings per week are $497 in the hospital sector if overtime is included, the highest of the three employer groups. Average earnings have fallen in the non-institutional health services sector, either because the growth in this sector was been concentrated in lower-paying jobs, or because part-time/casual hours have declined over the five years.

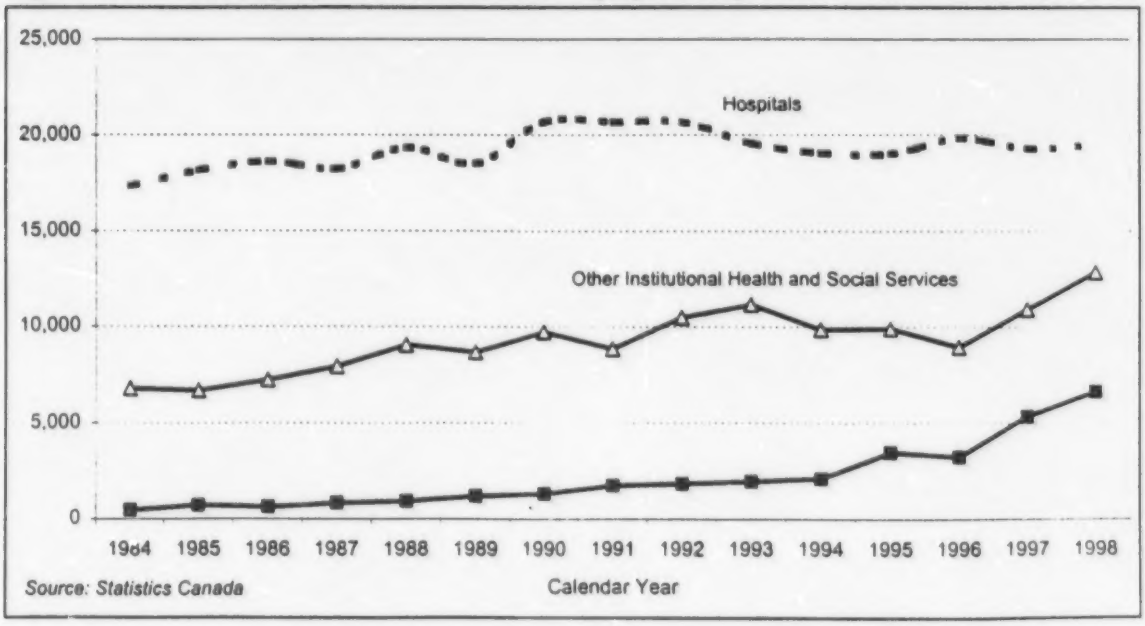
Table 3.6 Employment and Payroll Data for Selected Employer Groups, Saskatchewan

	Hospitals		Other Institutional Health and Social Services		Non-Institutional Health Services		Total	
	1998	Average annual change from 1993	1998	Average annual change from 1993	1998	Average annual change from 1993	1998	Average annual change from 1993
Number of paid employees	19,481	-0.1%	12,845	2.9%	6,636	27.7%	38,961	3.6%
Annual payroll ($ millions)	$496	-1.6%	$245	0.9%	$152	24.7%	$894	1.2%
Average weekly earnings excluding overtime	$490	0.4%	$367	1.0%	$442	-0.8%	$441	0.3%
Average weekly earnings including overtime	$497	0.5%	$371	1.2%	$446	-1.3%	$447	0.4%
Overtime as percent of payroll	1.4%	+0.5%^{pp}	1.1%	+0.9%^{pp}	0.8%	-2.5%^{pp}	1.2%	+0.3%^{pp}

pp = change in percentage points

Source: Statistics Canada Survey of Employment Payroll and Hours

Figure 3.13 Paid Employment in Health Care Employer Groups, 1984 to 1998, Saskatchewan



Source: Statistics Canada

Although there has not been a thorough analysis done, other studies have found an increase over the past two years in the use of mandatory overtime for nurses in some of the health districts and in some specialized areas. There is also a good deal of anecdotal evidence of an increase in overtime in the hospital sector and the SEPH data do confirm that overtime has increased over the past five years. But Figure 3.14 shows that the increase is not dramatic and, in fact, paid overtime as a percentage of payroll is lower in 1998 than it was in 1990. The increase in overtime is more dramatic in non-hospital institutions such as special care homes where overtime as a percentage of payroll has increased from 0.2% in 1993 to 1.2% in 1998.

There is no easy way to reconcile the anecdotal evidence with the data from SEPH. One possibility is that the overtime worked is taken as time off in lieu rather than as pay; this kind of arrangement would not register in the SEPH data.

Figure 3.14 Overtime as a Percentage of Payroll, Hospitals and Other Institutional Health and Social Services Employers, Saskatchewan, 1984 to 1998

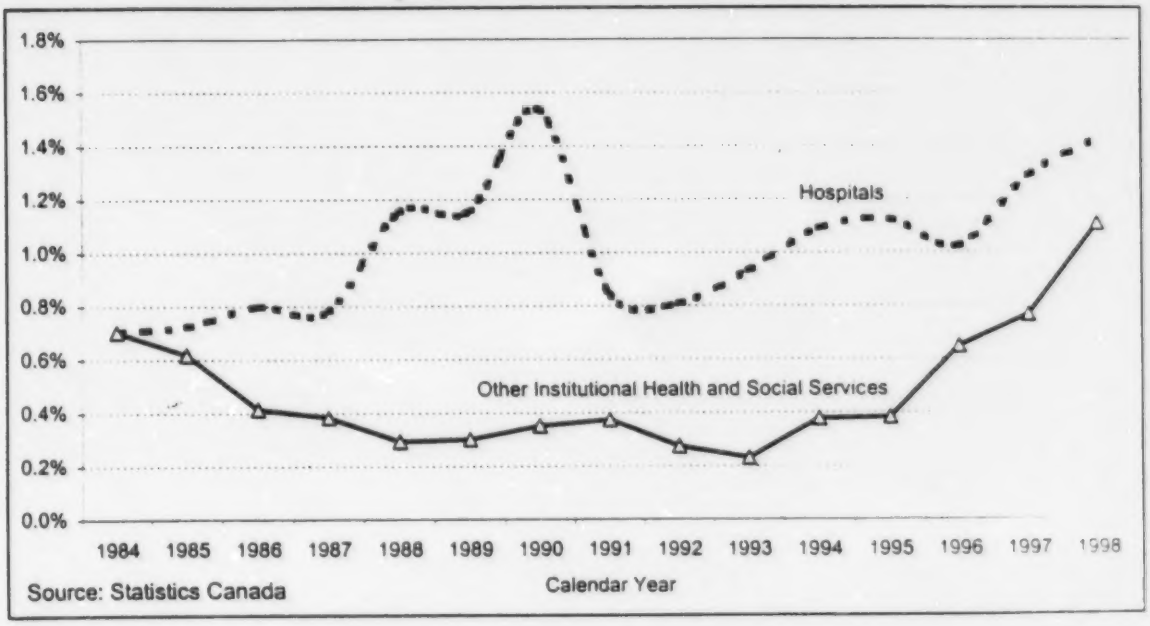
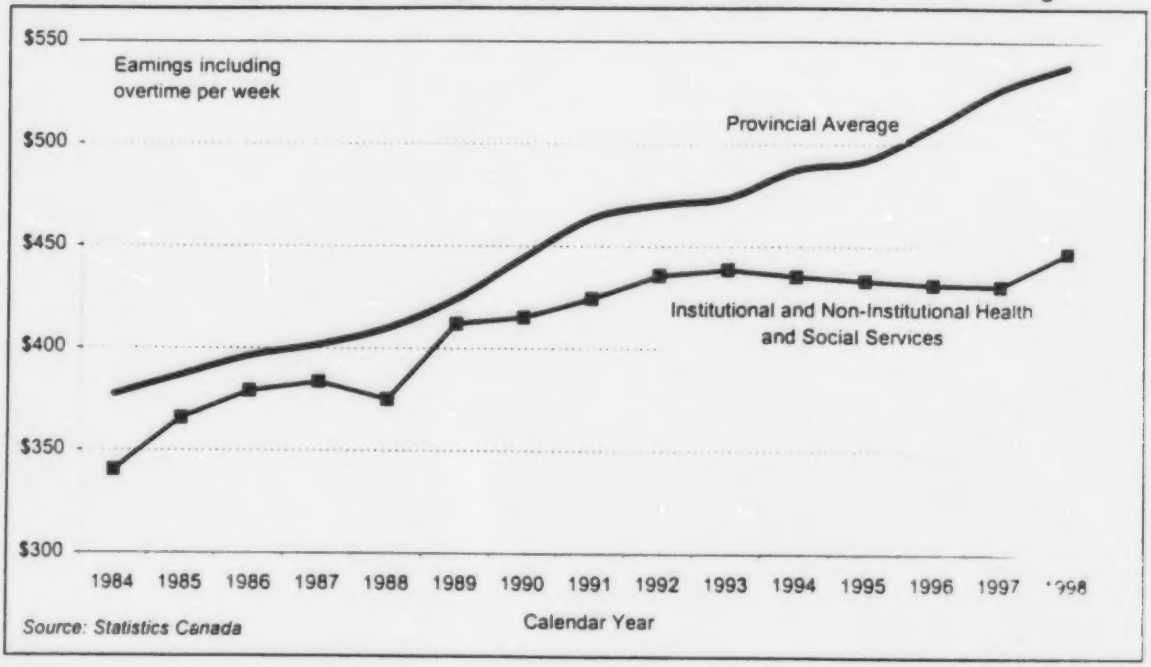


Figure 3.15 compares average weekly earnings in these three employer groups (combined) with the provincial average. Earnings in the health sector have fallen relative to the provincial average, a phenomenon that has occurred across almost all of the public sector in the 1990s. From 1993 to 1998, average earnings in the sector have increased by 0.4% per year on average compared with 2.6% for the province as a whole. As a consequence, health care workers in the sector now earn 83% of the provincial average compared with 97% in 1989.

Some of this decline could be a consequence of the move from full-time to part-time/casual employees. (This has the effect of lowering the average weekly earnings.) The same phenomenon is occurring in the general provincial labour market, however, so wage restraint in the public sector is the more likely explanation.

Figure 3.15 Average Weekly Earnings Comparison, Health Sector and Provincial Average



3.4 Hours of Work

Definitive data that can be used to address the important issue of the "casualization" of nursing staff, particularly those in the younger age groups, is difficult to obtain. This section pulls together disparate data from several sources to examine the current situation and recent trends.

- The CIHI database has reported on the number of RNs working on a "casual" rather than "regular" basis but not for a number of years. The database contains the number of persons working full-time and part-time but there are no precise definitions for these terms because they are based on a check box on the registration form. And there is no indication of what the hours of work are for the part-time respondents or to what extent they are combining part-time/casual work across different employers.
- The SALPN database has information about "regular" and "casual" employment for practising LPNs.
- Statistics Canada uses a cutoff point of 30 hours per week to define part-time staff but there are no published data specific to the nursing occupations more current than the 1996 census.
- Saskatchewan Health's Health Employer Survey has data on the number of full-time and part-time positions but the number of casual positions has only been included in the survey for the past two years.
- The Graduate Follow-up Surveys from SIAST can be used to measure full-time and part-time status for recent graduates.

3.4.1 Registered Nurses and Registered Psychiatric Nurses

Statistics Canada Census

The census measures hours of work for those who worked during 1995 and who reported their occupation in June 1996 as Nursing Supervisors, Registered Nurses, or Registered Psychiatric Nurses. Table 3.7 shows that, of the 9,890 persons[1] in this occupation group, only 50% worked full-time full-year in 1995. Another 21% worked the entire year but mainly on a part-time basis. The remaining 29% worked part of the year on either full-time (13%) or part-time (16%) basis.

More specifically, 61% worked full-time in the week prior to the census (see Figure 3.16) and 13% worked more than 40 hours in that particular week.

The labour force attachment statistics from the census can be broken down into broad age groups and compared with the situation in 1990. These data are shown in Figure 3.17.

There is a clear pattern in the data showing that attachment increases with age — 56% of those in the 45 to 64 age group worked full-time, full-year in 1995 compared with 50% of those in the 25 to 44 age group and 21% of those in the 15 to 24 age group (of which there are very few).

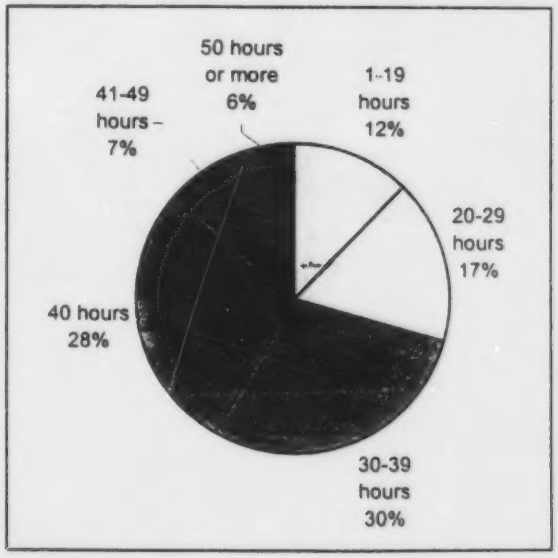
The other pattern that is clear is that this age difference has become more pronounced since 1990. Finally, the data also suggest that the

Table 3.7 Labour Force Attachment in 1995 for RNs/RPNs

Weeks worked	Type of work	Number	% of total
Less than 26 weeks	Mostly full-time	370	4%
	Mostly part-time	845	9%
	Subtotal	1,215	12%
27 to 48 weeks	Mostly full-time	900	9%
	Mostly part-time	700	7%
	Subtotal	1,600	16%
49 to 52 weeks (full year)	Mostly full-time	4,930	50%
	Mostly part-time	2,030	21%
	Subtotal	6,960	70%
Total	Mostly full-time	6,205	63%
	Mostly part-time	3,575	36%
	Worked in 1995	9,780	99%
	Did not work	110	1%
Experienced Labour Force[1]		9,890	100%

Source: Statistics Canada Census

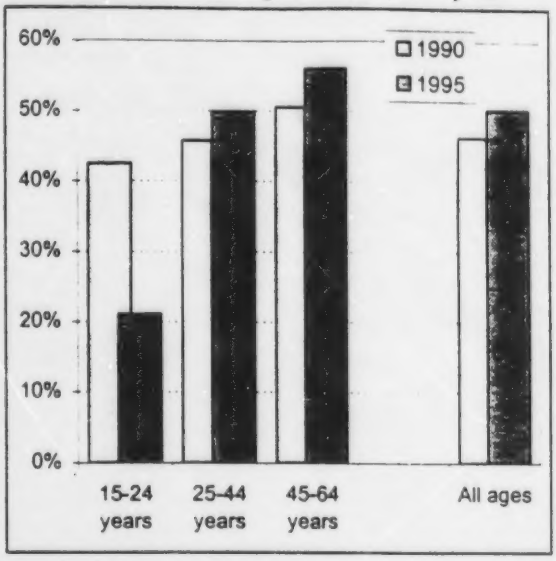
Figure 3.16 RN/RPN Hours of Work, June 1996



[1] The "experienced labour force" is the term used by Statistics Canada for persons who have worked within the past twelve months even though they may not be currently working.

proportion of RNs/RPNs working on a full-time, full-year basis has increased overall from 1990 to 1995 although the increase is limited to those in the 25 and older age group.

Figure 3.17 Proportion of RNs/RPNs Working Full-time, Full-year



CIHI Data

The SRNA registration form asks RNs to indicate whether they worked on a i) regular full-time, ii) regular part-time, or iii) casual basis in the prior year. CIHI collapses non-response to this question with those who report casual employment so we have no specific data on the number or RNs working on a casual basis. Responses to this question are shown in Table 3.8 broken down by employer type. (These data were only published for some of the ten years under consideration.)

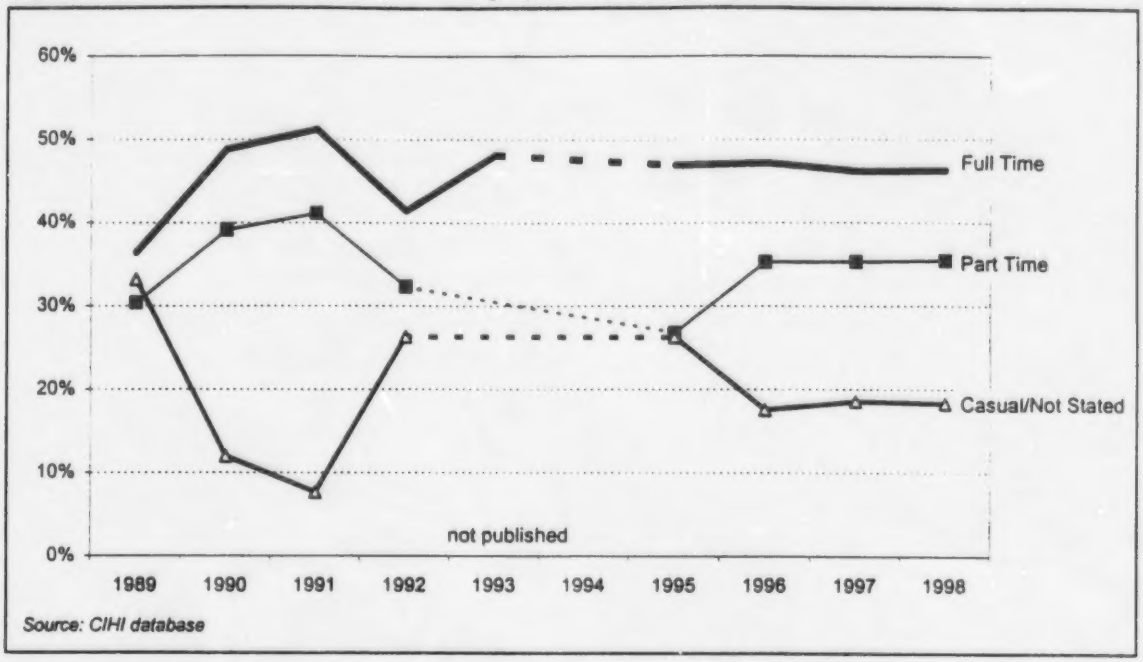
The data in Table 3.8 and Figure 3.18 show that there has been virtually no change in the proportion of RNs working on a full-time basis in the last four years; 46% were working on a full-time basis in 1998 compared with 47% in 1995 and 49% in 1990. The situation is relatively stable in each of the employer categories shown in Table 3.8.

Table 3.8 Employment Status, Saskatchewan RNs

	Employer Category											
	Hospital*		Nursing Homes		Home Care		Community Health		All Others		All employers	
	FT	% of total	FT	% of total	FT	% of total	FT	% of total	FT	% of total	FT	% of total
1990	2,991	51%	345	37%	**	**	327	51%	403	47%	4,066	49%
1995	2,338	49%	335	31%	165	36%	367	52%	760	52%	3,965	47%
1996	2,342	50%	401	32%	173	33%	420	52%	678	55%	4,014	47%
1997	2,267	49%	388	31%	183	34%	408	52%	656	52%	3,902	46%
1998	2,243	49%	398	32%	186	32%	435	53%	651	53%	3,913	46%

* includes mental health centres and rehab centres in 1990
** not published, included in "all others"
Note: data not published in 1993 or 1994
Source: CIHI database

Figure 3.18 Hours of Work for RNs Employed in Nursing, Saskatchewan



Health Employers Survey

The Health Employers Survey, conducted annually by Saskatchewan Health, shows that the proportion of RN/RPN positions that are designated as full-time has declined slightly over the last eight years, from 55% in 1990 to 53% in 1997 (see Table 3.9. The proportion of full-time positions designated for specialties (e.g. Critical Care, Emergency Room) has also been declining slowly as have the proportion of positions in public health and primary care.

Figure 3.19 shows that a decline in the number of full-time positions is not evident among general duty nurses, where the proportion working full-time has increased from a low of 42% in 1996 to 46% in 1998.

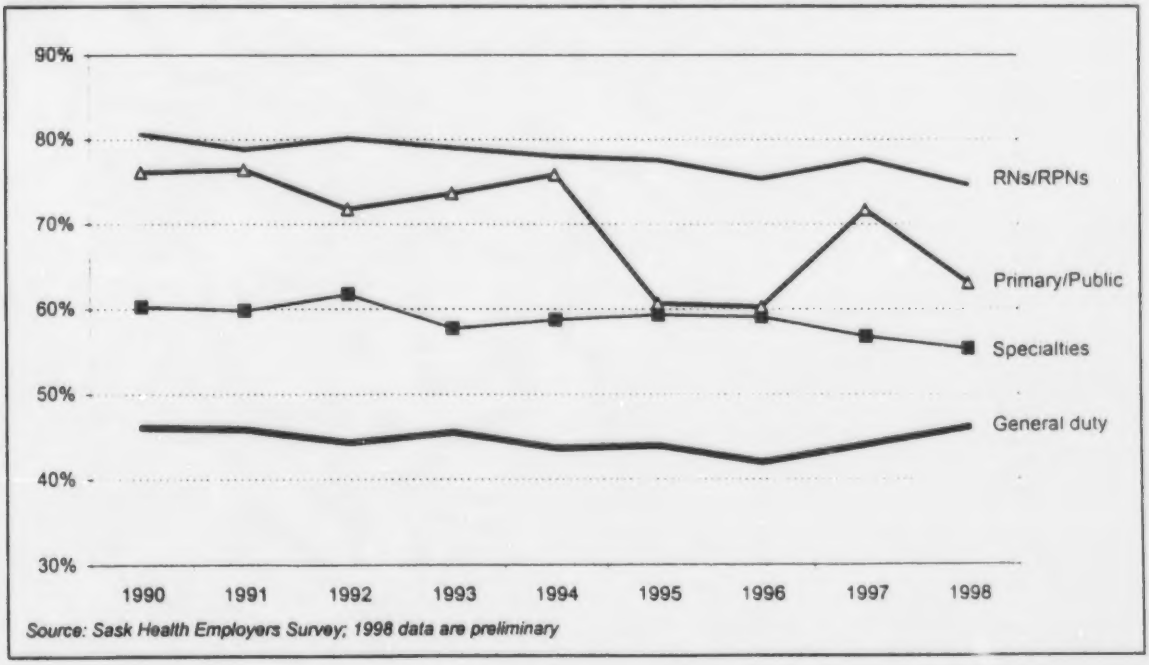
Table 3.9 Employment Status of Nursing Positions, Saskatchewan RNs/RPNs

	Full Time		Part Time		Full and Part Time		Casual	Total
	Number	% of total	Number	% of total	Number	% of total	Number	Number
1990	5,485	55%	4,404	45%	9,889	100%	..	9,889
1991	5,262	55%	4,376	45%	9,638	100%	..	9,638
1992	5,244	55%	4,368	45%	9,612	100%	..	9,612
1993	5,001	55%	4,093	45%	9,094	100%	..	9,094
1994	4,915	54%	4,216	46%	9,131	100%	..	9,131
1995	4,829	54%	4,161	46%	8,990	100%	..	8,990
1996	4,718	53%	4,235	47%	8,953	100%	..	8,953
1997	4,163	53%	3,622	47%	7,785	100%	3,738	11,523
1998	*4,261*	*51%*	*4,058*	*49%*	*8,319*	*100%*	*3,320*	*11,639*

Note: 1998 data exclude Nursing Administrators who tend to work full time

Source: Sask Health Employers Survey

Figure 3.19 Proportion of Positions that are Full Time, by Type of Position



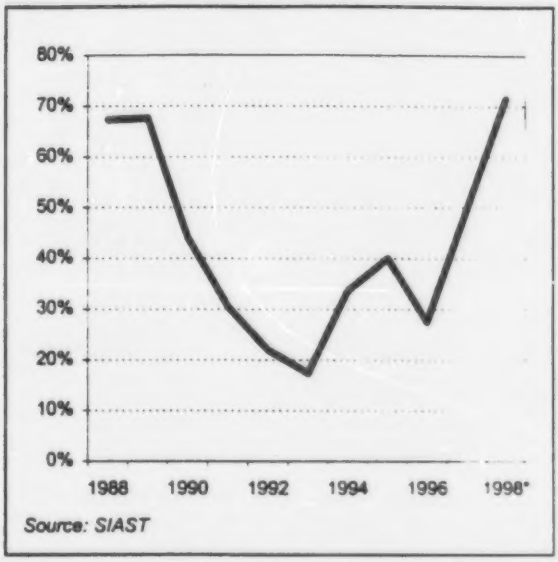
Source: Sask Health Employers Survey; 1998 data are preliminary

Graduate Follow-up Survey

In the survey of graduates conducted six months after graduation, SIAST asks respondents who were working in jobs related to their field of study if they are working on a full-time or part-time basis. Figure 3.20 shows a dramatic turnaround since the low in 1993 when only 17% of graduates had found full-time work in their field. Preliminary estimates for 1998 suggest that the proportion is now 71%, the highest in over ten years.

More detail on the results of the graduate follow-up surveys are provided in Appendix 5.

Figure 3.20 Proportion of SIAST RN/RPN Graduates who are Working Full Time in Nursing



3.4.2 Licensed Practical Nurses

Statistics Canada Census

As with RNs/RPNs, the census measures hours of work for those who worked during 1995 and who reported their occupation as "Registered Nursing Assistants" in June 1996. Table 3.10 shows that, of the 1,495 persons[1] in this occupation group, 52% worked full-time full-year in 1995, about the same as the 50% of RNs/RPNs who worked full-time full-year in 1995. Another 18% worked the entire year but mostly on a part-time basis. The remaining 30% worked part of the year on either full-time (11%) or part-time (17%) basis or did not work at all (2%).

Over the course of 1995, approximately two thirds (63%) of LPNs worked full-time. More specifically, 73% worked full-time in the week prior to the census (see Figure 3.21) and 13% worked more than 40 hours in that week.

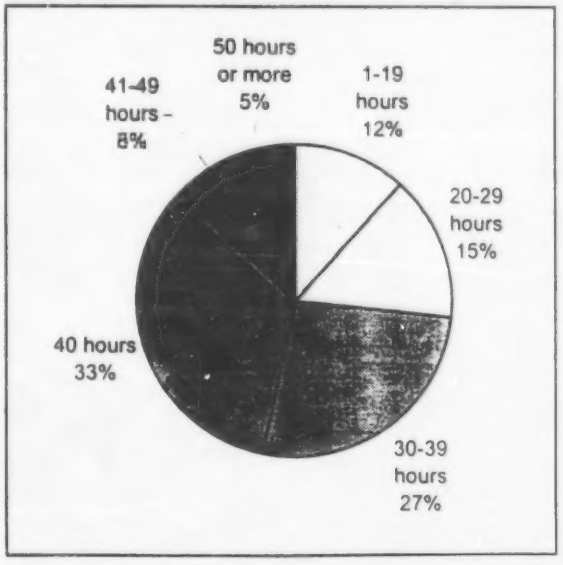
As with RNs/RPNs, the proportion who worked full-time, full-year in 1995 (63%) increased from 1990 when only 44% reported working full-time, full-year.

Table 3.10 Labour Force Attachment in 1995 for Persons Working as "Registered Nursing Assistants"

Weeks worked	Type of work	Number	% of total
Less than 26 weeks	Mostly full-time	30	2%
	Mostly part-time	130	9%
	Subtotal	210	14%
27 to 48 weeks	Mostly full-time	130	9%
	Mostly part-time	115	8%
	Subtotal	245	16%
49 to 52 weeks (full year)	Mostly full-time	775	52%
	Mostly part-time	265	18%
	Subtotal	1,040	70%
Total	Mostly full-time	945	63%
	Mostly part-time	510	34%
	Worked in 1995	1,455	97%
	Did not work	35	2%
Experienced Labour Force[1]		1,495	100%

Source: Statistics Canada Census

Figure 3.21 Hours of Work for "Registered Nursing Assistants", June 1996



1 The "experienced labour force" is the term used by Statistics Canada for persons who have worked within the past twelve months even though they may not be currently working.

Registration Database

The SALPN registration form asks LPNs to indicate whether they worked on a regular full-time, regular part-time, or casual basis in the prior year. Responses to this question are shown in Table 3.11 broken down by employer type.

The data show that there has been an increase in the proportion of persons working on a regular full-time or part-time (rather than casual) basis over the past ten years. In 1990, 57% were working on a regular basis compared with 65% in 1997. The increase is especially evident among those working in rural hospitals.

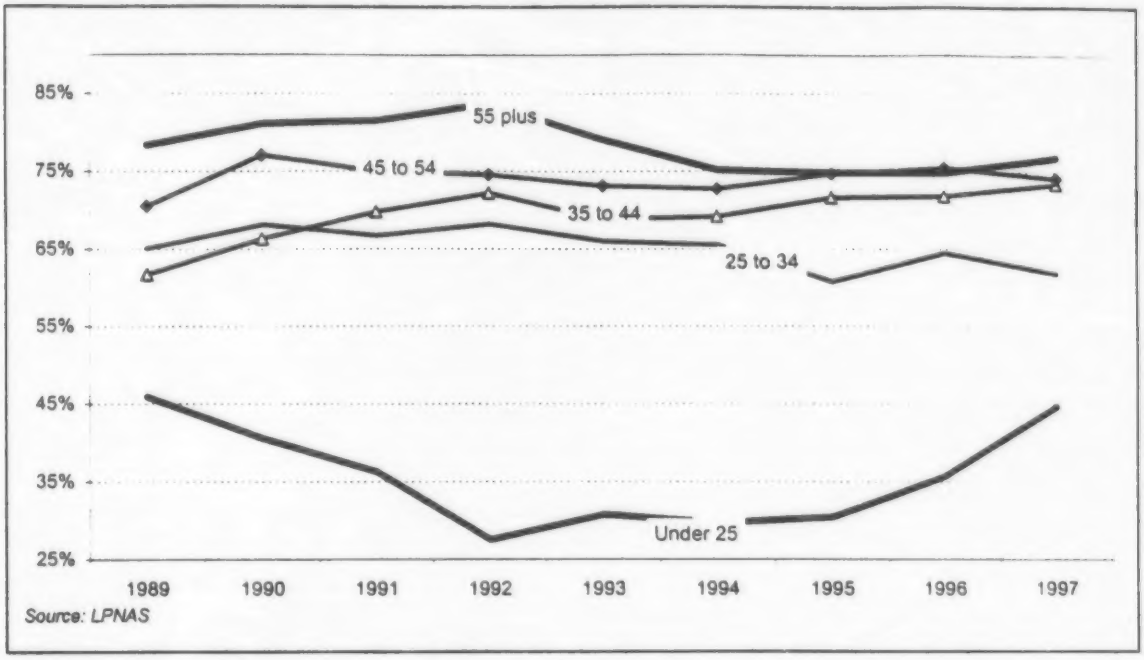
A breakdown by age group (see Figure 3.22) shows that the increase in the proportion of LPNs working on a regular basis is evident among the relatively few under 25 years of age and among those in the 35 to 44 age group.

Table 3.11 Employment Status, Saskatchewan LPNs

	Employer Category											
	Acute, general hospitals		Rural hospitals		Extended care, nursing homes, rehab/psych hospitals		Home care, community health		All Others		All employers	
	Regular	% of total	Regular	% of total	Regular	% of total	Regular	% of total	Regular	% of total	Regular	% of total
1990	852	68%	224	67%	289	69%	38	60%	56	81%	1,459	57%
1991	866	70%	233	71%	291	66%	39	57%	48	79%	1,477	59%
1992	843	72%	229	72%	299	68%	39	49%	53	84%	1,463	61%
1993	731	70%	187	72%	297	66%	37	45%	109	81%	1,361	59%
1994	664	69%	188	73%	307	67%	64	56%	71	76%	1,294	59%
1995	691	70%	192	77%	285	68%	69	59%	74	76%	1,311	63%
1996	694	72%	201	79%	281	69%	76	60%	62	70%	1,314	64%
1997	698	71%	198	79%	261	71%	70	61%	66	77%	1,293	65%

Source: LPNAS registration database

Figure 3.22 Proportion of LPNs Working on a Regular Full-time or Part-time Basis, by Age Group



Source: LPNAS

Health Employers Survey

The Health Employers Survey, conducted annually by Saskatchewan Health, shows that the proportion of LPN positions that are designated as full-time has declined slightly over the last eight years, from 55% in the early 1990s to 48% in 1997 (see Table 3.12 and Figure 3.23). Preliminary data for 1998 suggests that there may have been a recent conversion of casual positions to full and part-time positions.

Figure 3.23 Proportion of LPN Positions Designated as Full-Time (excluding casual)

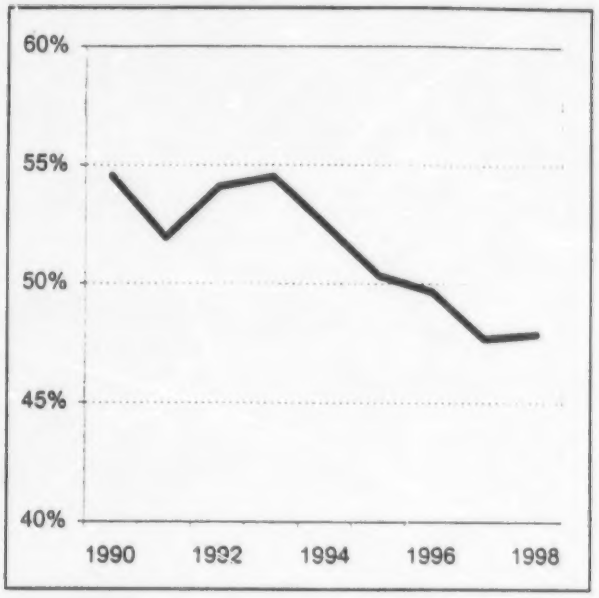


Table 3.12 Employment Status of LPN Positions, Saskatchewan

	Full Time		Part Time		Full and Part Time		Casual	Total
	Number	% of total	Number	% of total	Number	% of total	Number	Number
1990	949	55%	791	45%	1,740	100%	..	1,740
1991	875	52%	810	48%	1,685	100%	..	1,685
1992	873	54%	741	46%	1,614	100%	..	1,614
1993	690	55%	576	45%	1,266	100%	..	1,266
1994	644	52%	585	48%	1,229	100%	..	1,229
1995	609	50%	601	50%	1,210	100%	..	1,210
1996	607	50%	615	50%	1,222	100%	..	1,222
1997	488	48%	535	52%	1,023	100%	583	1,606
1998	*623*	*48%*	*674*	*52%*	*1,297*	*100%*	*525*	*1,822*

Note: 1998 data are preliminary

Source: Sask Health Employers Survey

Graduate Follow-up Survey

In the survey of graduates conducted six months after graduation, SIAST asks respondents who are working in a field related to their education if they are working on a full-time or part-time basis. Figure 3.24 shows a steady increase from the low in 1992 when only 6% of new LPN graduates had found full-time work in their field. Preliminary estimates for 1998 suggest that the proportion is now 80%.

More detail on the results of the graduate follow-up surveys are provided in Appendix 5.

Figure 3.24 Proportion of LPN SIAST Graduates who are Working Full Time in the Field of Nursing

Summary

At the beginning of this section, we noted that there was no definitive data on the extent of "casualization" of the nursing labour force. The data analyzed above do, however, provide some indication of changes in the hours of work over the last ten years.

With respect to Registered Nurses and Registered Psychiatric Nurses, the findings are summarized below in point form.

- The census data shows that there was an increase in the proportion of RNs/RPNs working full-time, full-year between 1990 and 1995 but only among those 25 to 64 years of age.
- The data from the SRNA registration forms shows effectively no change from 1990 to 1998 in the proportion of RNs working on a full-time, part-time, or casual basis.
- The Health Employers Survey shows a stable proportion of full-time positions for general duty nurses from 1990 to 1998 and a slight increase in part-time positions for primary care and public health nurses.
- The SIAST graduate follow-up surveys show that recent graduates are much more likely to be working full-time than they were in the early to mid 1990s.

With respect to Licensed Practical Nurses, the findings are summarized below in point form.

- The census data shows that there was an increase in the proportion of LPNs working full-time, full-year between 1990 and 1995.
- The SALPN registration database shows an increasing proportion of LPNs working on a regular (rather than casual) basis over the past eight years and this trend is also occurring among those under 25 years of age.
- The Health Employers Survey shows a slight decline in the proportion of LPN positions designated as full-time, from 55% in the early 1990s to 48% in 1998.
- The SIAST graduate follow-up survey shows an increasing proportion of recent LPN graduates who are working full-time.

In summary then, there is no statistical evidence that the number of full-time positions in nursing has declined substantially over the past five to ten years. Young nurses/recent graduates were apparently having difficulty finding full-time work in the early and mid 1990s but the situation has improved markedly since then.

3.5 Other Factors Affecting Demand

Unlike the other factors considered in this section of the report and unlike the supply situation described in Section 2, the factors affecting the future demand for nursing staff are difficult or even impossible to quantify. This section looks at some of the factors that have been considered and comments, in a qualitative way, on what their impact may be on the demand for nursing staff.

A number of factors have been identified that could affect either the total demand for nursing staff or the mix of RNs/RPNs/LPNs and unlicensed health care workers. These are itemized below.

Population Demographics	Over the long term, the demographics of the provincial population will lead to increased demand for health services. Except for the very young and women in child bearing age groups, the demand for health services increases with age and the provincial population is aging. So the underlying trend on the demand side is for more health care workers. The difficulties arise when we try to forecast how that general upward trend translates into trends for particular occupation groups or the mix of service delivery models.
Technological change	The acute care sector is no stranger to computer technology but, until recently, it has been limited to medical equipment. The use of computer technology in management information systems has been relatively late in coming to the health care sector. Most observers agree that the advent of computer technology will increase, rather than decrease, the demand for staff in the short term. Extensive training is required before staff working in acute care facilities are comfortable with the new management information systems.
Full-time, part-time, casual mix	This is the largest question mark for future demand. The mix of staff and the incidence of overtime can dramatically affect the number of persons required to handle the workload — it takes almost twice as many part-time nurses to do the same work as one full-time nurse. The seven-day per week 24-hour per day nature of acute care and long term care delivery means that there will continue to be a need for part-time and casual nursing staff. Assuming no shortage of supply, the mix is largely based on management decisions by the districts and by personal choices made by staff. Both of these factors are difficult to forecast and probably vary from district to district and from year to year.

Home care	The trend to home care rather than institutional care is evident in the data presented in this report and is unlikely to be reversed in the short term. The demand for nursing staff in home care may be less than in acute care so this trend will have a dampening effect on demand.
Scope of practise	The split of responsibilities between Registered Nurses and Physicians and between Licensed Practical Nurses and Registered Nurses can affect demand in a significant way. Although the issue has been discussed at length, there seems to be no change on the horizon that would affect demand substantially.

Given the uncertainty on the demand side, the next section comparing supply and demand will use a "status quo" scenario for the combined RN/RPN group and for the LPN group. Note that both the supply and demand data measure the number of persons registered rather than the number of full-time equivalents and are, therefore, affected by the incidence of other-than-full-time hours of work.

RN/RPN Scenario	The demand for RNs/RPNs is constant at its current level of 9,567 persons. There is some evidence to support this eventuality, namely that the number has been effectively constant over the past ten years in spite of the upheaval in the health care delivery system.
LPN Scenario	The demand for LPNs is constant at its current level of approximately 2000 persons. Given the history of LPN employment, this scenario effectively assumes a reversal in the downward trend evident since 1989.

4.0 COMPARING SUPPLY AND DEMAND

Section 2 described the characteristics of the current and future supply of RNs, RPNs, and LPNs in Saskatchewan and Section 3 looked at the elements of the demand. In this section, these two factors are brought together to look at the surplus/shortfall.

The first step is to look at vacancy and turnover rates for the recent past (Section 4.1). The tightness in the labour market is addressed using Employment Insurance Data (Section 4.2). The final section (Section 4.3) looks at the projected supply and compares it with the projected demand.

4.1 Vacancies and Turnover Rates

The Health Employer Survey includes data on the number of vacant full-time and part-time positions in the public and private parts of the health care sector. The data relevant to nursing positions is presented in Appendix 6 and summarized in Table 4.1.

Several observations can be made about the data in Table 4.1:

- the vacancy rate[1] was relatively stable ranging near 1% until 1998 when it increased sharply to 3.3%;
- the vacancy rate increase in 1998 occurred in all categories except the primary care/public nurses which typically had high vacancy rates; and
- the vacancies are most pronounced in the acute care positions — three quarters are for general duty or specialty positions.

Appendix 6 has more detail about the vacancy rates including the fact that the increase in vacancies from 1997 to 1998 occurred in both full-time and part-time positions.

Table 4.1 Vacancies and Vacancy Rates, Full Time and Part Time, by Type of Nursing Position

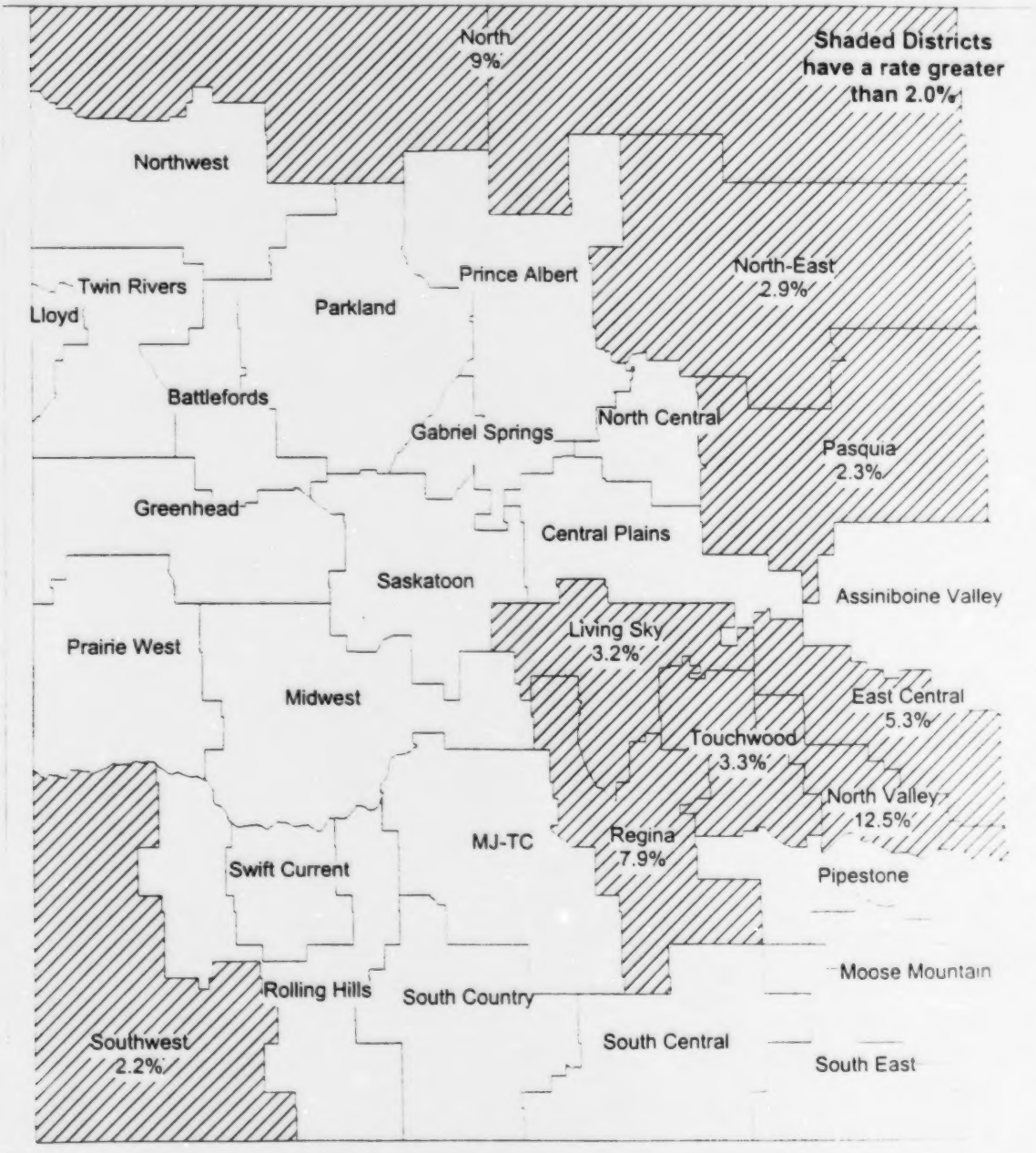
	Position Category													
	Administration & education		General duty		Specialties		Primary/ Public		RPNs		LPNs		All nursing positions**	
	#	Rate	#	Rate	#	Rate	#	Rate	#	Rate	#	Rate	#	Rate
1990	10	1.0%	101	2.0%	8	0.8%	14	3.3%	27	4.2%	9	0.5%	171	1.7%
1991	4	0.5%	85	1.7%	8	0.7%	8	2.1%	19	2.5%	4	0.2%	128	1.3%
1992	6	0.7%	29	0.6%	9	0.8%	6	1.5%	21	2.7%	4	0.2%	76	0.8%
1993	14	1.5%	49	1.0%	4	0.3%	15	4.1%	26	3.2%	4	0.3%	112	1.2%
1994	6	0.7%	25	0.5%	4	0.4%	7	2.2%	13	1.6%	12	1.0%	67	0.7%
1995	8	0.9%	68	1.5%	11	0.9%	17	3.5%	19	2.5%	16	1.3%	140	1.5%
1996	5	0.6%	36	0.8%	3	0.3%	22	4.0%	10	1.2%	15	1.2%	92	1.0%
1997	12	1.5%	26	0.6%	1	0.1%	13	3.1%	10	1.6%	9	0.9%	71	0.9%
*1998**	...	...	*174*	*3.7%*	*39*	*2.8%*	*18*	*3.5%*	*20*	*2.8%*	*31*	*2.3%*	*282*	*3.3%*

* 1998 data are preliminary and exclude those in administration and education
** includes unregistered Nursing positions
Source: Sask Health Employers Survey

[1] The vacancy rates in this report differ from those in the published reports by Saskatchewan Health. In the published reports, part-time vacancies were counted as 1/2 of a vacancy whereas in this report, full-time and part-time vacancies are both considered as full vacancies.

The vacancies did not occur uniformly across the province as Figure 4.1 shows. The far north and the northeast corner have traditionally had difficulty recruiting nursing staff and 1998 was no exception. In six other districts, including Regina, the vacancy rate was in excess of 2% although this represents fewer than 5 vacancies in all but Regina, East Central, and North Valley.

Figure 4.1 Health Districts with Nursing Vacancy Rates 2% or Greater in 1998



The Regina, East Central, and North Valley Health Districts showed the largest increases. The Regina Health District went from 18 vacancies in 1997 (rate of 1.2%) to 157 (rate of 7.9%) in 1998 and the North Valley Health District and East Central Districts went from no vacancies in 1997 to 36 vacancies in 1998.

In fact, the increase in the vacancy rate from 1997 to 1998 was largely a consequence of the situation in the Regina Health District; excluding that district, the vacancy rate in 1998 was 1.9%, only slightly above the five year average of 1.2%.

Turnover Rates

A "turnover" in the Health Employer Survey data occurs when the person in the position has changed during the year of the survey.

Except for the far North which has chronically high vacancy and turnover rates, there seems to be no correlation between turnover and vacancies. For example, for the five year average, the Northwest and Parkland Districts have high turnover rates but low vacancy rates whereas the East Central and Swift Current Districts have low turnover rates but high vacancy rates.

Table 4.2 Vacancy and Turnover Rates in Nursing Positions, by Health District

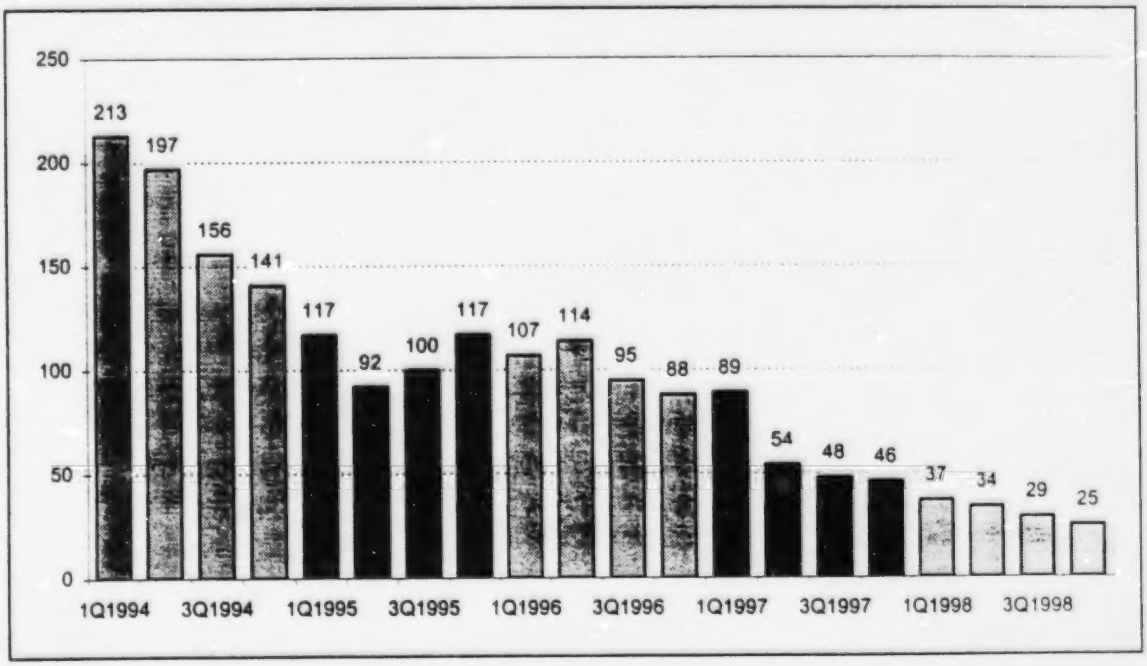
	Vacancy Rates		Turnover Rates	
	1993 to 1998 avg.	1998	1993 to 1998 avg.	1998
Assiniboine Valley	0.3%	0.0%	5%	10%
Battlefords	1.5%	0.0%	4%	3%
Central Plains	0.5%	0.7%	5%	13%
East Central	1.1%	5.3%	2%	4%
Gabriel Springs	0.0%	0.0%	4%	13%
Greenhead	0.0%	0.0%	6%	0%
Living Sky	0.9%	3.3%	4%	4%
Lloydminster	0.2%	0.0%	2%	1%
Midwest	1.7%	0.0%	4%	7%
Moose Jaw/ Thunder Creek	0.2%	0.3%	8%	5%
Moose Mountain	0.3%	0.0%	2%	3%
North Central	1.0%	1.2%	4%	7%
North Valley	2.7%	14.3%	5%	17%
North-East	0.8%	2.9%	3%	6%
Northwest	0.5%	1.1%	14%	15%
Parkland	1.0%	0.9%	14%	18%
Pasquia	0.8%	2.3%	4%	1%
Pipestone	1.3%	0.0%	5%	6%
Prairie West	2.3%	1.0%	5%	9%
Prince Albert	1.0%	1.5%	11%	6%
Regina	2.3%	7.9%	5%	5%
Rolling Hills	3.1%	0.0%	8%	18%
Saskatoon	1.0%	1.9%	4%	2%
South Central	0.2%	0.0%	6%	6%
South Country	0.0%	0.0%	0%	0%
South East	1.1%	0.0%	3%	0%
Southwest	1.3%	2.2%	10%	8%
Swift Current	5.8%	1.1%	3%	5%
Touchwood Qu'Appelle	2.3%	3.3%	8%	3%
Twin Rivers	0.7%	0.0%	0%	0%
Northern Sask	9.0%	8.6%	13%	22%

Source: Health Employers Survey

4.2 Employment Insurance

Data from Human Resources Development Canada on the number of persons receiving regular (that is, not maternity or disability) employment insurance benefits confirms that the margin between the supply of nursing staff and the demand has been narrowing since 1994. In the first quarter of 1994, for example, there were 213 Registered Nurses receiving benefits. Except for a period of modest increases in 1996 the number has been declining steadily since then. In the fourth quarter of 1998, only 25 Registered Nurses were receiving regular benefits.

Figure 4.2 Number of RNs/RPNs Receiving Regular Employment Insurance Benefits, Saskatchewan



4.3 Projected Shortfalls

In this section, the projected supply of RNs/RPNs and LPNs is compared with the projected demand to arrive at an estimate of the shortfall/surplus over the next five to ten years. This is then compared with the number of SIAST/University graduates to determine if the current supply/demand situation will improve or deteriorate over the short to medium term.

RNs/RPNs

Table 4.3 compares the three different supply scenarios developed in Section 2.4 with the constant demand scenario for RNs/RPNs developed in Section 3.5 and calculates the shortfall in 2003 and 2008. Note that:

- these figures represent persons, not full-time equivalents, and therefore implicitly assumes no change in the mix of full-time and other-than-full-time positions;
- the supply side figures exclude new entrants under 25 (effectively new graduates); and
- because of the drop in new graduates between 1998 and 2001, there is a "backlog" of demand for graduates.

At one extreme — the worst case scenario on the supply side — there is a shortfall of 331 RNs/RPNs per year over the next five or ten years. This is far beyond the capacity of the Saskatchewan education system and would require a significant level of in-migration or recruitment to avoid a chronic shortage. At the other extreme — improved levels of recruitment and retention on the supply side — the shortfall is 105 RNs/RPNs per year for the next five years and 146 per year from 1998 to 2008. This is only slightly above the current level of graduations from NEPS and would probably yield a tight labour market but no chronic shortage.

Table 4.3 Comparison of Supply and Demand Scenarios, RNs/RPNs

	Number available excluding new entrants under 25		Number required		Shortfall per year	
	2003	2008	2003	2008	1998-2003 5 year average	1998-2008 10 year average
Worst case	7,912	6,255	9,567	9,567	331	331
Status quo	8,393	7,005	9,567	9,567	235	256
With recruitment and retention	9,040	8,112	9,567	9,567	105	146

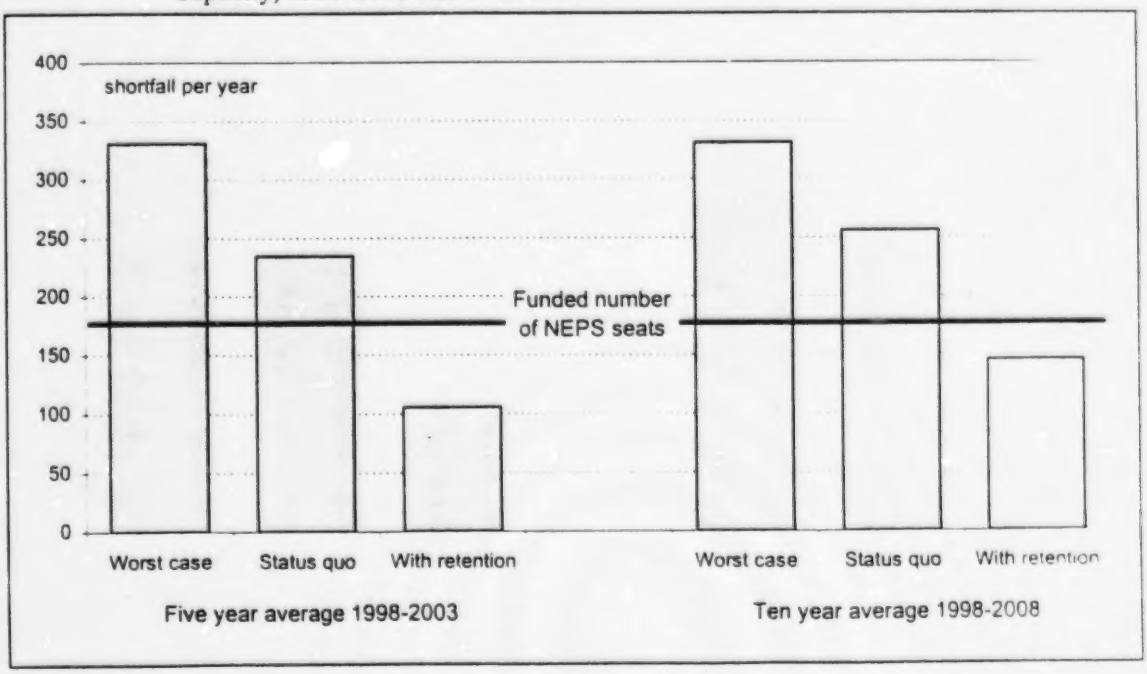
Source: Sask Trends Monitor

In the middle scenario — the status quo in terms of retention — the shortfall is 235 RNs/RPNs per year from 1998 to 2003. This would require an increase in the number of graduates over the next five years especially given the fact that there is a backlog of more than 200 vacancies.

The difference between the shortfall over the next five years and the one over the next ten years is relatively small for the "worst case" and "status quo" scenarios but it increases for the "with recruitment/retention" scenario. The assumptions used to project the supply of RNs/RPNs under that third scenario are that the rate of retention in the profession increases. In effect, this serves only to delay the inevitable shortfall and the age distribution of currently practising RNs/RPNs eventually leads to a supply shortage.

Figure 4.3 shows that the funded capacity for 180 seats in the NEPS program will be insufficient to meet the demand under the worst case or status quo scenario. Even in the recruitment/retention scenario the number of seats appears insufficient; the combination of the current vacancy backlog and the fact that the number of new graduates working in the field will be less than the funded capacity could lead to a very tight labour market.

Figure 4.3 Comparison of Projected Annual Shortfall in RNs/RPNs and NEPS Funded Capacity, 1998-2003 and 1998-2008



LPNs

Table 4.4 compares the three different supply scenarios developed in Section 2.4 with the assumed constant demand scenario for LPNs described in Section 3.5 and calculates the shortfall over the next five and ten years. As with the RNs/RPNs:

- these figures represent persons, not full-time equivalents and therefore implicitly assumes no change in the mix of full-time and other-than-full -time positions;
- the supply figures exclude new entrants under the age of 25 (effectively new graduates); and
- there is a "backlog" of unfilled positions in the system.

For the "worst case" supply scenario there is a shortfall of 129 LPNs per year over the next five years. This is double the number of current SIAST graduates. For the "with recruitment/retention" scenario, the shortfall is 64 LPNs per year for the next five years, the current level of graduations.

In the middle scenario — the status quo in terms of retention — the shortfall per year from 1997 to 2002 is 90 per year if there is a constant demand for 2,000 LPNs. This scenario would require an increase in the number of LPN graduates over the next five years especially given the fact that there are current vacancies of 30 positions.

The difference between the shortfall over the next five years and the one over the next ten years is relatively small for the three supply scenarios.

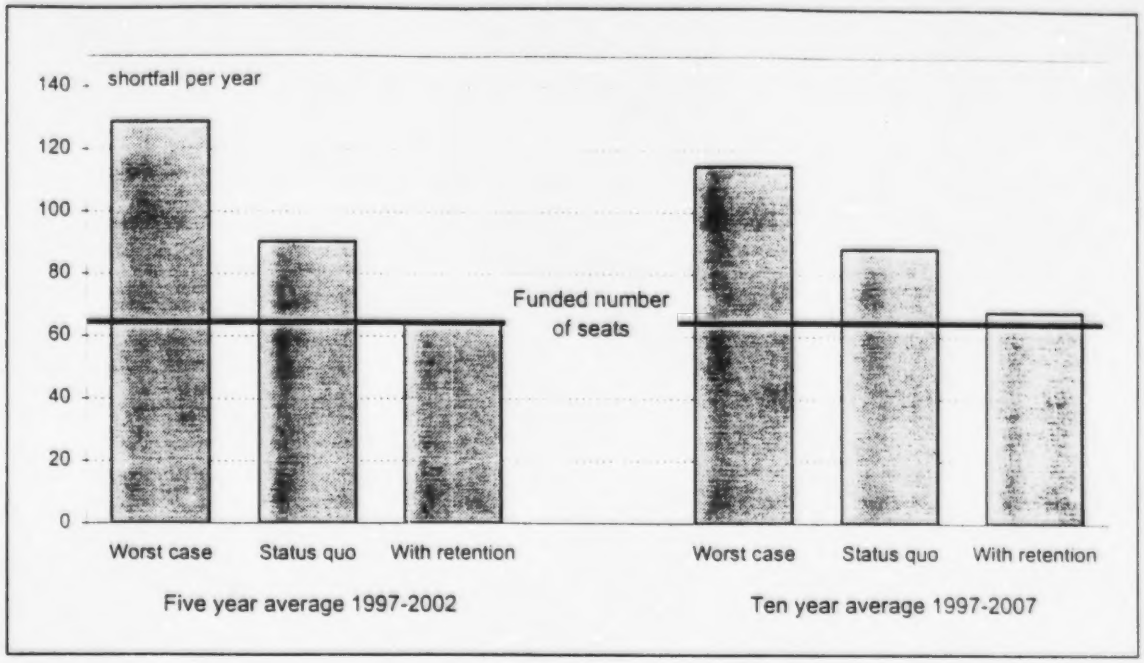
Figure 4.4 shows that the funded capacity for 64 seats in SIAST and the Regional Colleges will be insufficient to meet the demand under any of the scenarios.

Table 4.4 Comparison of Supply and Demand Scenarios, LPNs

	Number available excluding new entrants under 25		Number required		Shortfall per year	
	2002	2007	2002	2007	1997-2002 5 year average	1997-2007 10 year average
Worst case	1,355	850	2,000	2,000	129	115
Status quo	1,548	1,117	2,000	2,000	90	88
With recruitment and retention	1,679	1,319	2,000	2,000	64	68

Source: Sask Trends Monitor

Figure 4.4 Comparison of Annual Projected Shortfall in LPNs and Funded Seats, 1997-2002 and 1997-2007



Appendix 1
1991 and 1996 Data from the Statistics Canada Census

Field of Study

The "Field of Study" variable refers to the predominant discipline or area of learning or training of a person's highest postsecondary degree, certificate or diploma. The major field of study classification structure consists of 10 broad categories, 121 "minor" groups, and 425 "unit" groups. Only the minor and unit groups are useful for examining health professions.

The Field of Study variable is based on responses to the question:

What was the major field of study or training of this person's highest degree, certificate or diploma (excluding secondary or high school graduation certificates)? For example, accounting, carpentry, civil engineering, history, legal secretary, welding.

on the "long" form of the Census. It is, therefore, based on a 20% sample of the non-institutionalized population.

The "Health Care Occupations" are defined using the 1991 Standard Occupational Classification by Statistics Canada and includes as well as Registered Nurses, physicians, veterinarians, optometrists, pharmacists, and specialized therapists

Table 1: Basic Counts

	Non-university		University		Total	
	1991	1996	1991	1996	1991	1996
Nursing						
Nursing - general	9,660	10,485	3,250	3,915	12,910	14,400
Nursing - specialties	120	150	0	50	120	200
Psychiatric nursing	845	1,180	200	190	1,045	1,370
Public health nursing	0	10	85	60	85	70
Nursing - Other	15	45	35	35	50	80
Nursing Group Total	10,650	11,870	3,575	4,255	14,225	16,125
Nursing Assistance						
Nursing assistant	5,565	4,260	0	0	5,565	4,260
Health care aide/support	2,270	4,035	0	0	2,270	4,035
Long-term care aide	105	70	0	0	105	70
Nursing aide, orderly	520	595	0	0	520	595
Nursing Asstance Group Total	8,455	8,960	0	0	8,455	8,960

Table 2: Basic Counts by Province

University and non-University, 1996

	Atlantic	Que/Ont	Manitoba	Sask	Alberta	B.C.	Canada
Nursing							
Nursing - general	35,500	235,115	17,085	14,400	38,685	57,250	399,145
Nursing - specialties	310	4,615	260	200	835	1,900	8,160
Psychiatric nursing	275	1,520	1,025	1,370	1,040	2,090	7,340
Public health nursing	320	2,780	85	70	285	730	4,290
Nursing - Other	95	1,880	90	80	255	555	2,965
Nursing Group Total	36,470	245,920	18,535	16,125	41,120	62,530	421,910
Nursing Assistance							
Nursing assistant	14,650	63,765	4,645	4,260	9,720	11,660	108,970
Health care aide/support	3,345	28,725	4,110	4,035	2,055	4,860	47,195
Long-term care aide	440	510	30	70	165	4,655	5,905
Nursing aide, orderly	690	8,390	1,875	595	2,305	3,535	17,425
Nursing Asstance Group Total	19,120	101,385	10,665	8,960	14,245	24,715	179,490

Table 3: Growth Rates, 1991 to 1996

	Non-University	University	Total
Nursing			
Nursing - general	9%	20%	12%
Nursing - specialties	25%	...	67%
Psychiatric nursing	40%	-5%	31%
Public health nursing	..	-29%	-18%
Nursing - Other	200%	0%	60%
Nursing Group Total	11%	19%	13%
Nursing Assistance			
Nursing assistant	-23%	..	-23%
Health care aide/support	78%	...	78%
Long-term care aide	-33%	...	-33%
Nursing aide, orderly	14%	...	14%
Nursing Asstance Group Total	6%	...	6%

Table 4: Growth Rates by Province

University and non-University, 1991 to 1996 Increase

	Atlantic	Que/Ont	Manitoba	Sask	Alberta	B.C.	Canada
Nursing							
Nursing - general	10%	8%	6%	12%	7%	14%	9%
Nursing - specialties	35%	35%	6%	67%	23%	79%	41%
Psychiatric nursing	28%	16%	20%	31%	-13%	-2%	9%
Public health nursing	3%	7%	-35%	-18%	8%	1%	4%
Nursing - Other	90%	108%	200%	60%	82%	73%	97%
Nursing Group Total	10%	9%	7%	13%	7%	15%	10%
Nursing Assistance							
Nursing assistant	-5%	-3%	-10%	-23%	-5%	-7%	-5%
Health care aide/support	191%	81%	113%	78%	194%	102%	94%
Long-term care aide	29%	26%	20%	-33%	0%	31%	28%
Nursing aide, orderly	1%	57%	32%	14%	6%	38%	37%
Nursing Asstance Group Total	9%	16%	25%	6%	7%	17%	14%

Table 5: Share by Province

University and non-University, Percent of Canada Total in 1996

	Atlantic	Que/Ont	Manitoba	Sask	Alberta	B.C.	Canada
Nursing							
Nursing - general	8.9%	58.9%	4.3%	3.6%	9.7%	14.3%	100%
Nursing - specialties	3.8%	56.6%	3.2%	2.5%	10.2%	23.3%	100%
Psychiatric nursing	3.7%	20.7%	14.0%	18.7%	14.2%	28.5%	100%
Public health nursing	7.5%	64.8%	2.0%	1.6%	6.6%	17.0%	100%
Nursing - Other	3.2%	63.4%	3.0%	2.7%	8.6%	18.7%	100%
Nursing Group Total	8.6%	58.3%	4.4%	3.8%	9.7%	14.8%	100%
Nursing Assistance							
Nursing assistant	13.4%	58.5%	4.3%	3.9%	8.9%	10.7%	100%
Health care aide/support	7.1%	60.9%	8.7%	8.5%	4.4%	10.3%	100%
Long-term care aide	7.5%	8.6%	0.5%	1.2%	2.8%	78.8%	100%
Nursing aide, orderly	4.0%	48.1%	10.8%	3.4%	13.2%	20.3%	100%
Nursing Asstance Group Total	10.7%	56.5%	5.9%	5.0%	7.9%	13.8%	100%

Table 6: Age and Labour Force Activity

	Persons with Nursing Diplomas or Degrees in 1996						
	15-24	25-34	35-44	45-54	55-64	65 plus	Total
Labour Force Activity in June, 1996							
Employed	550	2,475	3,890	3,130	1,510	255	11,810
Unemployed	30	75	110	55	45	0	310
Total labour force	575	2,550	4,000	3,180	1,555	255	12,120
Not in the labour force	80	230	270	260	1,060	2,115	4,015
Total	655	2,780	4,270	3,445	2,615	2,370	16,135
Participation rate (% in labour force)	88%	92%	94%	92%	59%	11%	75%
Occupation Group in June, 1996							
Employed Persons Only							
Health Care occupations	435	2,055	2,960	2,120	800	35	8,405
All other occupations	110	420	930	1,005	710	220	3,405
Health Occupation Employment Rate							
(% in health care occupations)	66%	74%	69%	62%	31%	1%	52%

Table 7: Participation Rate by Province and Age Group

	Participation Rate in 1996 for Persons with Nursing Diplomas or Degrees						
	15-24	25-34	35-44	45-54	55-64	65 plus	Total
Newfoundland	61%	91%	89%	81%	31%	...	75%
Prince Edward Island	80%	90%	97%	83%	52%	...	73%
Nova Scotia	90%	92%	88%	81%	43%	4%	69%
New Brunswick	92%	95%	91%	84%	49%	3%	74%
Quebec	82%	91%	92%	89%	54%	7%	78%
Ontario	88%	90%	89%	87%	57%	7%	73%
Manitoba	91%	91%	92%	90%	52%	8%	76%
Saskatchewan	88%	92%	94%	92%	60%	11%	75%
Alberta	90%	90%	89%	88%	58%	8%	75%
British Columbia	87%	89%	89%	87%	54%	6%	69%
North	...	89%	94%	88%	79%	...	86%
Canada	86%	90%	90%	87%	55%	7%	74%

	Health Occupation Employment Rate in 1996						
	15-24	25-34	35-44	45-54	55-64	65 plus	Total
Newfoundland	31%	80%	73%	54%	13%	...	58%
Prince Edward Island	60%	81%	79%	52%	31%	...	54%
Nova Scotia	61%	75%	66%	56%	26%	...	50%
New Brunswick	46%	80%	75%	63%	31%	...	58%
Quebec	44%	76%	75%	68%	39%	3%	61%
Ontario	43%	67%	62%	55%	33%	2%	48%
Manitoba	59%	73%	68%	62%	30%	3%	55%
Saskatchewan	66%	74%	69%	62%	31%	1%	52%
Alberta	54%	70%	62%	54%	28%	1%	45%
British Columbia	44%	64%	60%	53%	30%	1%	44%
North	...	68%	63%	47%	50%	...	55%
Canada	46%	70%	65%	58%	32%	2%	51%

Table 8: Age and Labour Force Activity

	Persons with Nursing Assistance Diplomas or Certificates in 1996						
	15-24	25-34	35-44	45-54	55-64	65 plus	Total
Labour Force Activity in June, 1996							
Employed	365	1,595	2,515	1,750	780	55	7,070
Unemployed	45	80	70	45	35	10	280
Total labour force	405	1,675	2,590	1,795	820	60	7,350
Not in the labour force	45	240	185	160	355	640	1,630
Total	450	1,920	2,775	1,960	1,180	700	8,985
Participation rate (% in labour force)	90%	87%	93%	92%	69%	9%	82%
Occupation Group in June, 1996							
Employed Persons Only							
Health Care occupations	225	955	1,670	1,035	420	10	4,320
All other occupations	140	640	845	715	360	45	2,750
Health Occupation Employment Rate							
(% in health care occupations)	50%	50%	60%	53%	36%	1%	48%

Table 9: Participation Rate by Province and Age Group

	Participation Rate in 1996 for Persons with Nursing Assistance Education						
	15-24	25-34	35-44	45-54	55-64	65 plus	Total
Newfoundland	76%	88%	84%	79%	54%	...	78%
Prince Edward Island	67%	86%	93%	89%	60%	...	75%
Nova Scotia	88%	85%	81%	71%	40%	...	70%
New Brunswick	97%	89%	87%	83%	53%	...	77%
Quebec	81%	84%	86%	85%	53%	5%	78%
Ontario	86%	84%	85%	83%	56%	6%	73%
Manitoba	87%	89%	89%	86%	65%	4%	77%
Saskatchewan	90%	88%	94%	92%	70%	9%	82%
Alberta	78%	87%	87%	84%	56%	12%	73%
British Columbia	87%	82%	87%	83%	55%	6%	72%
North	...	86%	93%	86%	78%	...	86%
Canada	84%	85%	86%	83%	56%	6%	75%

	Health Occupation Employment Rate in 1996						
	15-24	25-34	35-44	45-54	55-64	65 plus	[illegible]
Newfoundland	30%	58%	48%	51%	12%	...	4[illegible]%
Prince Edward Island	...	68%	60%	54%	49%	...	5[illegible]%
Nova Scotia	47%	53%	47%	41%	24%	...	4[illegible]%
New Brunswick	59%	49%	51%	49%	31%	...	44%
Quebec	39%	56%	61%	61%	36%	2%	53%
Ontario	38%	45%	45%	44%	31%	1%	38%
Manitoba	47%	45%	50%	49%	33%	1%	4[illegible]%
Saskatchewan	50%	50%	60%	53%	36%	1%	48%
Alberta	34%	43%	40%	39%	19%	2%	33%
British Columbia	36%	39%	41%	38%	24%	2%	33%
North	...	36%	43%	23%	...	...	34%
Canada	40%	48%	49%	47%	29%	2%	4[illegible]%

Appendix 2
Occupation Specific Data from Statistics Canada

Occupation

Table 1 through 3 are based on the Statistica Canada Census and show the basic characteristics of the "labour force". The labour force consists of all persons who worked or looked for work in the week prior to the Census. The occupation, on the other hand, is based on either the occupation at the time of the Census or, in the case of those who are unemployed or not in the labour force, the occupation of their most recent job. The combination of those currently employed and those who have worked in the last twelve months is often called the "experienced labour force". Full-time is defined as 30 hours per week or more.

Tables 4 and 5 are based on the monthly Statistics Canada Labour Force Survey. These data refer only to employment in the "Professional Health Occupations", a category that Registered Nurses as well as dentists, optometrists, physicians, pharmacists, and therapists. It excludes nursing assistants.

Table 6 is based on the Census and refers to the general category of "health occupations". The occupations are based on the labour force activity of the respondent in the destination province.

Table 1: Basic Labour Force Activity

	Nursing supervisors/RNs		Reg. Nursing Assistants		Nursing aides & orderlies	
	Number	% of total	Number	% of total	Number	% of total
Labour Force Activity						
Employed	9,385	95%	1,385	93%	6,375	91%
Unemployed	195	2%	20	1%	160	2%
In the Labour Force	9,580	97%	1,405	94%	6,540	94%
Not in the Labour Force	305	3%	85	6%	445	6%
Experienced Labour Force	9,885	100%	1,495	100%	6,985	100%

Table 2: Age of the Labour Force

	Nursing supervisors/RNs		Reg. Nursing Assistants		Nursing aides & orderlies	
	Number	% of total	Number	% of total	Number	% of total
Labour Force by Age Group						
15-24 years	460	5%	25	2%	535	8%
25-34 years	2,395	25%	325	23%	1,400	21%
35-44 years	3,435	36%	455	32%	2,140	33%
45-54 years	2,330	24%	455	32%	1,555	24%
55-64 years	920	10%	120	9%	850	13%
65 years and over	35	0%	25	2%	60	1%
Total Labour Force	9,580	100%	1,410	100%	6,540	100%

Table 3: Labour Force Attachment

	Nursing supervisors/RNs		Reg. Nursing Assistants		Nursing aides & orderlies	
	Number	% of total	Number	% of total	Number	% of total
Labour Force Attachment (1995)						
Less than 26 weeks						
Mostly full-time	370	4%	30	2%	260	4%
Mostly part-time	845	9%	130	9%	680	10%
Subtotal	1,215	12%	170	11%	940	13%
27 to 48 weeks						
Mostly full-time	900	9%	130	9%	680	10%
Mostly part-time	700	7%	115	8%	545	8%
Subtotal	1,600	16%	245	16%	1,225	18%
49 to 52 weeks (full-year)						
Mostly full-time	4,930	50%	775	52%	3,420	49%
Mostly part-time	2,030	21%	265	18%	1,235	18%
Subtotal	6,960	70%	1,040	70%	4,660	67%
Total						
Mostly full-time	6,205	63%	945	63%	4,370	63%
Mostly part-time	3,575	36%	510	34%	2,460	35%
Worked in 1995	9,780	99%	1,455	97%	6,830	98%
Did not work	110	1%	35	2%	155	2%
Experienced Labour Force	9,890	100%	1,495	100%	6,980	100%

Table 4: Labour Force Status, Professional Health Occupations

numbers in thousands

	Labour Force	Employed — Total	Employed — Full time	Employed — Part time	Employment Growth Rate	Percent Full time
1987	12.0	11.8	8.6	3.2	....	73%
1988	12.8	12.6	9.1	3.6	7%	72%
1989	13.6	13.4	9.8	3.6	6%	73%
1990	11.5	11.4	7.6	3.9	-15%	67%
1991	12.3	12.0	8.5	3.5	5%	71%
1992	13.9	13.8	10.1	3.7	15%	73%
1993	13.2	13.0	9.2	3.8	-6%	71%
1994	13.1	12.8	9.5	3.3	-2%	74%
1995	12.0	11.9	8.7	3.2	-7%	73%
1996	11.2	11.1	7.6	3.5	-7%	68%
1997	13.8	13.8	9.9	3.7	23%	73%
1998	13.1	13.0	10.0	2.9	-4%	77%

Table 5: Employment in Professional Health Occupations by Province

	Canada	Atlantic	Quebec	Ontario	Man	Sask	Alberta	B C
1987	345	25	104	123	14	12	32	35
1988	343	26	92	127	13	13	30	43
1989	350	31	96	127	13	13	33	38
1990	351	31	101	124	13	11	32	39
1991	363	32	99	131	14	12	33	43
1992	372	31	104	135	13	14	32	44
1993	381	31	106	135	15	13	32	49
1994	397	33	111	147	14	13	35	45
1995	401	34	117	141	16	12	36	46
1996	353	29	107	121	15	11	29	41
1997	387	31	107	134	15	14	35	50
1998	399	33	107	140	16	13	37	53
Average annual growth rate:								
1988 to 1998	1.5%	2.2%	1.6%	1.0%	1.7%	0.3%	2.1%	2.1%
1996 to 1998	6.2%	6.7%	0.2%	7.8%	2.6%	8.2%	12.2%	12.7%

Table 6: Interprovncial Migration among those Employed in Health Occupations

1991 to 1996 Migration

	From:								
To:	Atlantic	Quebec	Ontario	Manitoba	Sask	Alberta	B.C.	North	Total
Atlantic	1,560	520	1,280	95	85	265	195	35	4,035
Quebec	385	0	1,180	40	20	150	180	15	1,970
Ontario	1,800	1,600	0	535	365	855	975	40	6,170
Manitoba	135	50	335	0	355	225	175	15	1,290
Saskatchewan	45	50	315	340	0	530	235	0	1,515
Alberta	460	155	1,200	420	1,155	0	1,025	110	4,525
British Columb	730	510	2,605	730	820	2,710	0	180	8,285
North	85	20	140	40	70	215	75	10	655
Total inflow	4,035	1,970	6,170	1,290	1,515	4,525	8,285	655	28,445
Total outflow	5,200	2,905	7,055	2,200	2,870	4,950	2,860	405	28,445
Net flow	(1,165)	(935)	(885)	(910)	(1,355)	(425)	5,425	250	0

1995 to 1996 Migration

	From:								
To:	Atlantic	Quebec	Ontario	Manitoba	Sask	Alberta	B.C.	North	Total
Atlantic	370	170	425	20	40	90	115	10	1,240
Quebec	75	0	355	45	0	30	30	15	550
Ontario	425	445	0	150	80	210	440	10	1,760
Manitoba	30	25	80	0	80	95	85	0	395
Saskatchewan	45	20	65	70	0	270	105	20	595
Alberta	205	70	370	130	225	0	400	40	1,440
British Columbia	125	85	580	145	140	590	0	55	1,720
North	25	10	65	10	10	80	25	0	225
Total inflow	1,240	550	1,760	395	595	1,440	1,720	225	7,925
Total outflow	1,300	825	1,940	570	575	1,365	1,200	150	7,925
Net flow	(60)	(275)	(180)	(175)	20	75	520	75	0

Appendix 3
Data from the CIHI Database

Registered Nurses

These data are derived from the annual licensing/renewal forms of all Registered Nurses registering in a province or territory in Canada. A procedure used by CIHI/Statistics Canada removes most duplicate records for nurses registered in more than one province, allocating them to their province of residence if multiple registrations are evident.

Notes:

1. *The high proportion of "not stated" for Quebec is because the registration form allows Quebec nurses to indicate that they did not want the data shared with CIHI.*

2. *There are inconsistencies over the years as the registration forms upon which these data are based are modified and as the definitions and concepts in health care practise change. There are also inconsistencies across provinces depending on the content of the registration forms and the definitions of facilities and positions. (For example, Quebec does not have a "home care" program and Manitoba does not have "nursing homes".)*

3. *There are not precise definitions for some of the terms (e.g. multiple employer) because they are based on check boxes on the registration forms. In effect, these are all self-identified variables*

4. *The counts are based on the first six months of the registration period so, for example, the 1998 data refer to the number of persons as of June 30th, 1998. The employment characteristics, on the other hand, will refer to the prior year.*

Table 1: Basic Counts by Age Group and Employment Status

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Total registrations	**8,513**	**8,680**	**8,783**	**9,118**	**8,826**	**9,047**	**8,844**	**8,955**	**8,810**	**8,673**
Total reporting										
Under 25	447	443	438	327	290	278	276	304	236	166
25 to 34	2,703	2,646	2,471	2,438	2,241	2,209	2,064	2,001	1,876	1,783
35 to 44	2,755	2,928	3,080	3,266	3,157	3,264	3,252	3,272	3,171	3,053
45 to 54	1,718	1,734	1,781	1,995	2,011	2,119	2,182	2,288	2,399	2,528
55 plus	890	929	1,013	1,087	1,122	1,171	1,046	1,072	1,128	1,143
Total reporting	8,513	8,680	8,783	9,113	8,821	9,041	8,820	8,937	8,810	8,673
Employed on a regular basis in Nursing										
Under 25	...	...	...	...	96	...	41	...	...	...
25 to 34	...	...	...	...	1,629	...	1,369	...	...	...
35 to 44	...	...	...	...	2,447	...	2,574	...	...	...
45 to 54	...	...	...	...	1,629	...	1,823	...	...	...
55 plus	...	...	...	...	854	...	868	...	...	...
Total reporting	...	...	...	...	6,655	...	6,675	...	...	...
Employed on a casual basis in Nursing										
Under 25	...	...	...	...	138	...	148	...	...	...
25 to 34	...	...	...	...	496	...	567	...	...	...
35 to 44	...	...	...	...	607	...	585	...	...	...
45 to 54	...	...	...	...	320	...	301	...	...	...
55 plus	...	...	...	...	171	...	155	...	...	...
Total reporting	...	...	...	...	1,732	...	1,756	...	...	...
Employed on regular or casual basis in Nursing										
Under 25	422	413	411	302	234	214	189	242	204	153
25 to 34	2,614	2,541	2,369	2,334	2,125	2,068	1,936	1,865	1,799	1,708
35 to 44	2,650	2,834	2,980	3,144	3,054	3,122	3,159	3,169	3,057	2,997
45 to 54	1,670	1,683	1,717	1,914	1,949	2,026	2,124	2,200	2,318	2,488
55 plus	826	855	917	1,001	1,025	1,056	1,023	1,015	1,078	1,109
Total reporting	8,182	8,326	8,394	8,695	8,387	8,486	8,431	8,491	8,456	8,455
Not employed in Nursing	284	276	285	55	72	94	109	107	97	65
Not employed at all	...	...	...	231	209	242	195	163	153	149
Not stated	47	78	104	134	155	137	93	177	104	4

data not available from publication

Table 2: Distribution by Age Group and Employment Status

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Age Group										
Under 25	5%	5%	5%	4%	3%	3%	3%	3%	3%	2%
25 to 34	32%	30%	28%	27%	25%	24%	23%	22%	21%	21%
35 to 44	32%	34%	35%	36%	36%	36%	37%	37%	36%	35%
45 to 54	20%	20%	20%	22%	23%	23%	25%	26%	27%	29%
55 plus	10%	11%	12%	12%	13%	13%	12%	12%	13%	13%
Total reporting	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Employed on a regular basis in Nursing										
Under 25	...	...	...	...	1%	...	1%	...	...	...
25 to 34	...	...	...	...	24%	...	21%	...	...	...
35 to 44	...	...	...	...	37%	...	39%	...	...	...
45 to 54	...	...	...	...	24%	...	27%	...	...	...
55 plus	...	...	...	...	13%	...	13%	...	...	...
Total reporting	...	...	...	...	100%	...	100%	...	...	...
Employed on a casual basis in Nursing										
Under 25	...	...	...	...	8%	...	8%	...	...	...
25 to 34	...	...	...	...	29%	...	32%	...	...	...
35 to 44	...	...	...	...	35%	...	33%	...	...	...
45 to 54	...	...	...	...	18%	...	17%	...	...	...
55 plus	...	...	...	...	10%	...	9%	...	...	...
Total reporting	...	...	...	...	100%	...	100%	...	...	...
Employed on regular or casual basis in Nursing										
Under 25	5%	5%	5%	3%	3%	3%	2%	3%	2%	2%
25 to 34	32%	31%	28%	27%	25%	24%	23%	22%	21%	20%
35 to 44	32%	34%	36%	36%	36%	37%	37%	37%	36%	35%
45 to 54	20%	20%	20%	22%	23%	24%	25%	26%	27%	29%
55 plus	10%	10%	11%	12%	12%	12%	12%	12%	13%	13%
Total reporting	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

data not available from publication

Table 3: Employment Rates by Age Group and Employment Status

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Percent employed on a regular basis in Nursing										
Under 25	...	...	...	...	33%	...	15%	...	...	...
25 to 34	...	...	...	...	73%	...	66%	...	...	...
35 to 44	...	...	...	...	78%	...	79%	...	...	...
45 to 54	...	...	...	...	81%	...	84%	...	...	...
55 plus	...	...	...	...	76%	...	83%	...	...	...
Total reporting	...	...	...	...	75%	...	76%	...	...	...
Percent employed on a casual basis in Nursing										
Under 25	...	...	...	...	48%	...	54%	...	...	...
25 to 34	...	...	...	...	22%	...	27%	...	...	...
35 to 44	...	...	...	...	19%	...	18%	...	...	...
45 to 54	...	...	...	...	16%	...	14%	...	...	...
55 plus	...	...	...	...	15%	...	15%	...	...	...
Total reporting	...	...	...	...	20%	...	20%	...	...	...
Percent employed in Nursing										
Under 25	94%	93%	94%	92%	81%	77%	68%	80%	86%	92%
25 to 34	97%	96%	96%	96%	95%	94%	94%	93%	96%	96%
35 to 44	96%	97%	97%	96%	97%	96%	97%	97%	96%	98%
45 to 54	97%	97%	96%	96%	97%	96%	97%	96%	97%	98%
55 plus	93%	92%	91%	92%	91%	90%	98%	95%	96%	97%
Total reporting	96%	96%	96%	95%	95%	94%	96%	95%	96%	97%
Not Employed in Nursing or Not Stated										
Under 25	6%	7%	6%	8%	19%	23%	32%	20%	14%	8%
25 to 34	3%	4%	4%	4%	5%	6%	6%	7%	4%	4%
35 to 44	4%	3%	3%	4%	3%	4%	3%	3%	4%	2%
45 to 54	3%	3%	4%	4%	3%	4%	3%	4%	3%	2%
55 plus	7%	8%	9%	8%	9%	10%	2%	5%	4%	3%
Total reporting	4%	4%	4%	5%	5%	6%	4%	5%	4%	3%

... data not available from public sector

Table 4: Employment as Percentage of Total Registered by Province (excluding missing values)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Employed in Nursing										
Atlantic	95%	95%	95%	96%	96%	96%	95%	95%	95%	96%
Quebec/Ontario	91%	91%	87%*	90%	90%	90%	91%	91%	93%	91%
Manitoba	97%	95%	97%	98%	98%	101%	99%	98%	98%	98%
Saskatchewan	97%	97%	97%	97%	97%	95%	97%	97%	97%	98%
Alberta	91%	93%	95%	91%	92%	92%	93%	92%	93%	96%
British Columbia	91%	92%	93%	93%	93%	93%	99%	100%	100%	100%
North	94%	97%	94%	94%	94%	101%	96%	95%	94%	95%
Canada	92%	92%	91%*	92%	92%	92%	93%	93%	94%	94%
Not Employed in Nursing										
Atlantic	5%	5%	5%	4%	4%	4%	5%	5%	5%	4%
Quebec/Ontario	9%	9%	13%*	10%	10%	10%	9%	9%	7%	9%
Manitoba	3%	5%	3%	2%	2%	-1%	1%	2%	2%	2%
Saskatchewan	3%	3%	3%	3%	3%	5%	3%	3%	3%	2%
Alberta	9%	7%	5%	9%	8%	8%	7%	8%	7%	4%
British Columbia	9%	8%	7%	7%	7%	7%	1%	0%	0%	0%
North	6%	3%	6%	6%	6%	-1%	4%	5%	6%	5%
Canada	8%	8%	9%*	8%	8%	8%	7%	7%	6%	6%

* excludes Quebec

Table 4: Type of Employer

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
All Employers	**8,152**	**8,326**	**8,394**	**8,698**	**8,390**	**8,491**	**8,447**	**8,508**	**8,456**	**8,455**
Full time	2,981	4,066	4,296	3,604	4,034	...	3,965	4,014	3,902	3,913
Part time	2,485	3,261	3,454	2,809	4,356	...	2,264	3,002	2,987	2,997
Not stated	2,716	999	644	2,285	0	...	2,218	1,492	1,567	1,545
Hospitals*	**5,657**	**5,898**	**5,960**	**5,447**	**5,314**	**4,885**	**4,747**	**4,678**	**4,625**	**4,578**
Full time	2,143	2,991	3,134	...	2,631	...	2,338	2,342	2,267	2,243
Part time	1,661	2,193	2,354	...	2,683	...	1,156	1,384	1,357	1,364
Not stated	1,853	714	472	...	0	...	1,253	952	1,001	971
Mental Health Centres*				**70**	**77**	**73**	**86**	**62**	**59**	**61**
Full time	*Included in general hospitals*			...	61	...	62	46	38	43
Part time				...	16	...	9	8	15	11
Not stated				...	0	...	15	8	6	7
Nursing Stations				**81**	**81**	**89**	**99**	**89**	**95**	**94**
Full time	*Included in community health*			...	53	...	60	56	56	41
Part time				...	28	...	11	14	12	21
Not stated				...	0	...	28	19	27	32
Rehabilitation Centres				**294**	**274**	**254**	**246**	**153**	**140**	**142**
Full time	*Included in general hospitals*			...	116	...	99	61	58	48
Part time				...	158	...	65	55	48	70
Not stated				...	0	...	82	37	34	24
Nursing Homes	**886**	**927**	**960**	**991**	**1,036**	**1,068**	**1,084**	**1,272**	**1,253**	**1,243**
Full time	268	345	379	...	357	...	335	401	388	398
Part time	380	499	526	...	679	...	420	670	659	643
Not stated	240	83	55	...	0	...	329	201	206	202
Home Care				**318**	**353**	**411**	**455**	**525**	**540**	**582**
Full time	*Included in community health*			...	126	...	165	173	183	186
Part time				...	227	...	175	285	280	309
Not stated				...	0	...	115	67	77	87
Community Health	**625**	**647**	**639**	**383**	**286**	**702**	**705**	**805**	**783**	**819**
Full time	243	327	343	...	177	...	367	420	408	435
Part time	178	253	262	...	109	...	208	310	315	307
Not stated	204	67	34	...	0	.	130	75	60	77

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* Prior to 1996 psychiatric hospitals were considered in the "mental health centre" category

Table 4: Type of Employer (continued)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
All Others	**675**	**579**	**577**	**739**	**549**	**767**	**599**	**805**	**846**	**895**
Full time	250	281	305	...	292	...	303	448	455	491
Part time	199	223	234	...	257	...	136	247	266	266
Not stated	226	75	38	...	0	...	160	110	125	138
Not stated	**339**	**275**	**258**	**375**	**420**	**242**	**426**	**119**	**115**	**41**
Full time	79	122	135	...	221	...	236	67	49	28
Part time	67	93	78	...	199	...	84	29	35	6
Not stated	193	60	45	...	0	...	106	23	31	7
Percent of all responses:										
Hospitals*	72%	73%	73%	65%	67%	59%	59%	56%	55%	54%
Mental Health Centres	...	...	...	1%	1%	1%	1%	1%	1%	1%
Rehab Centres	...	...	...	4%	3%	3%	3%	2%	2%	2%
Nursing Homes	11%	12%	12%	12%	13%	13%	14%	15%	15%	15%
Home care/community	8%	8%	8%	9%	9%	15%	16%	17%	17%	18%
All others	9%	7%	7%	9%	7%	9%	7%	10%	10%	11%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Percent Employed in Hospitals*										
Atlantic	76%	75%	75%	69%	71%	69%	69%	69%	68%	69%
Quebec/Ontario	72%	70%	70%	61%	63%	60%	62%	63%	59%	58%
Manitoba	72%	72%	72%	64%	65%	63%	64%	64%	62%	62%
Saskatchewan	**72%**	**73%**	**73%**	**65%**	**67%**	**59%**	**59%**	**56%**	**55%**	**54%**
Alberta	77%	77%	77%	67%	69%	64%	64%	59%	59%	60%
British Columbia	75%	76%	76%	60%	66%	62%	65%	64%	66%	66%
North	51%	52%	51%	52%	51%	51%	50%	46%	47%	46%
Canada	73%	73%	73%	63%	65%	62%	63%	63%	61%	60%

** includes Mental Health Centres and Rehab Centres prior to 1992*

Table 5: Type of Position, Saskatchewan

Position	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Director	344	354	346	330	313	302	234	242	238	236
Assistant Directors				76	68	66	62	54	42	44
Supervisors	336	360	353	381	403	404	444	378	375	400
Clinical specialist	15	20	20	33	40	46	42	48	44	48
Head Nurse	209	283	265	231	227	211	235	222	221	228
Staff/Community nurse	5,951	6,237	6,317	6,296	6,286	6,259	6,267	6,122	6,369	6,521
Office/Industrial/Instructor Research/Consultant	601	563	557	328	321	324	340	598	679	725
Not stated	726	509	536	1,023	732	879	823	844	488	253
Total	8,182	8,326	8,394	8,698	8,390	8,491	8,447	8,508	8,456	8,455

Table 6: Percent in Supervisory, Director, or Head Nurse Positions by Province

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Atlantic	14%	15%	15%	14%	14%	13%	12%	11%	11%	11%
Quebec/Ontario	17%	14%	14%	12%	11%	11%	10%	11%	10%	9%
Manitoba	15%	15%	15%	14%	13%	13%	13%	11%	11%	10%
Saskatchewan	**12%**	**13%**	**12%**	**13%**	**13%**	**13%**	**13%**	**12%**	**11%**	**11%**
Alberta	11%	11%	10%	11%	10%	9%	9%	9%	9%	9%
British Columbia	11%	11%	10%	13%	12%	11%	10%	8%	8%	7%
North	26%	25%	25%	20%	24%	19%	19%	15%	15%	17%
Canada	15%	13%	13%	12%	12%	11%	11%	10%	9%	9%

Table 7: Percent in Staff, Specialist, or Community Positions by Province

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Atlantic	77%	77%	76%	82%	82%	82%	83%	80%	81%	80%
Quebec/Ontario	75%	76%	76%	82%	83%	84%	84%	78%	77%	75%
Manitoba	75%	76%	76%	82%	82%	83%	83%	79%	79%	79%
Saskatchewan	**80%**	**80%**	**81%**	**82%**	**83%**	**83%**	**83%**	**81%**	**80%**	**80%**
Alberta	80%	81%	81%	83%	83%	84%	83%	78%	79%	80%
British Columbia	73%	81%	81%	82%	82%	83%	83%	81%	81%	82%
North	65%	67%	67%	78%	72%	75%	75%	72%	72%	72%
Canada	75%	78%	78%	82%	83%	83%	84%	79%	78%	77%

Table 8: Education Level (Employed in Nursing Only)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
All positions										
Diploma*	7,194	7,288	7,348	7,361	7,158	7,086	6,989	6,942	6,836	6,808
Degree	988	1,038	1,046	1,337	1,232	1,405	1,458	1,566	1,620	1,647
Total	8,182	8,326	8,394	8,698	8,390	8,491	8,447	8,508	8,456	8,455
Staff/Community nurses only										
Diploma*	5,457	5,694	5,771	5,586	5,637	5,473	5,464	5,236	5,409	5,525
Degree	494	543	546	710	649	786	803	886	960	996
Total	5,951	6,237	6,317	6,296	6,286	6,259	6,267	6,122	6,369	6,521

Table 9: Percent with Degrees by Province

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Atlantic	15%	16%	17%	18%	18%	19%	20%	20%	22%	23%
Quebec/Ontario	13%	14%	15%	15%	16%	17%	17%	18%	20%	21%
Manitoba	13%	14%	15%	15%	16%	17%	17%	19%	21%	21%
Saskatchewan	12%	12%	12%	15%	15%	17%	17%	18%	19%	19%
Alberta	19%	20%	20%	20%	21%	23%	24%	26%	28%	30%
British Columbia	15%	16%	16%	17%	18%	19%	21%	22%	24%	25%
North	28%	28%	30%	16%	32%	32%	34%	32%	34%	35%
Canada	14%	15%	16%	16%	17%	18%	19%	19%	22%	23%

Table 10: Percent of Staff/Community Nurses with Degrees by Province

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Atlantic	11%	11%	12%	13%	14%	14%	15%	16%	17%	18%
Quebec/Ontario	10%	11%	11%	11%	12%	13%	14%	15%	15%	16%
Manitoba	9%	10%	11%	11%	12%	12%	13%	11%	12%	12%
Saskatchewan	8%	9%	9%	11%	10%	13%	13%	14%	15%	15%
Alberta	13%	14%	14%	15%	16%	17%	18%	21%	24%	26%
British Columbia	8%	11%	12%	12%	13%	14%	16%	17%	19%	20%
North	23%	24%	27%	13%	29%	29%	29%	29%	30%	31%
Canada	10%	11%	12%	12%	13%	14%	15%	16%	17%	18%

* includes post-basic diploma

data not available from publication

Table 11: Area of Responsibility, Saskatchewan

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Medical/surgical	...	...	...	1,853	1,730	1,698	1,563	1,674	1,619	1,558
Psychiatric	...	...	...	145	139	150	168	161	168	165
Paediatric	...	...	...	355	318	275	277	262	260	256
Maternal	...	...	...	438	422	436	409	399	399	401
Geriatric	...	...	...	1,281	1,256	1,282	1,259	1,325	1,314	1,306
Critical care	...	...	...	620	632	634	629	637	646	666
Community health	...	...	...	379	383	489	502	543	552	588
Ambulatory care	...	...	...	49	56	68	71	107	98	91
Home care	...	...	...	235	290	365	383	462	488	539
Occupational health	...	...	...	77	75	82	85	83	91	100
Operating room	...	...	...	254	259	267	263	315	322	333
Emergency	...	...	...	288	267	296	282	312	313	333
Several	...	...	...	1,112	1,226	989	1,160	761	801	796
Other patient care	...	...	...	530	503	485	516	287	351	428
Teaching/admin/reasearch	...	...	...	540	524	551	533	792	784	788
Not stated	...	...	...	542	330	424	347	388	250	107
Total	...	...	...	8,698	8,390	8,491	8,447	8,508	8,456	8,455
Reclassified by Specialty										
Critical Care Units	...	...	...	1,162	1,158	1,197	1,174	1,264	1,281	1,332
Community/Home Care	...	...	...	614	653	854	885	1,005	1,040	1,127
Other/several	...	...	...	5,840	5,725	5,465	5,508	5,059	5,101	5,101
Teaching/admin/research	...	...	...	540	524	551	533	792	784	788
Total reporting	...	...	...	8,156	8,060	8,067	8,100	8,120	8,206	8,348

... data not available from publication

Table 12: Percent in Critical Care Units (incl. OR and ER) by Province

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Atlantic	...	...	...	13%	14%	14%	14%	15%	13%	20%
Quebec/Ontario	...	...	...	17%	17%	16%	17%	15%	15%	16%
Manitoba	...	...	...	16%	16%	16%	16%	16%	16%	17%
Saskatchewan	...	...	...	**14%**	**14%**	**15%**	**14%**	**16%**	**16%**	**16%**
Alberta	...	...	...	15%	15%	16%	16%	16%	16%	17%
British Columbia	...	...	...	19%	19%	19%	19%	18%	18%	18%
North	...	...	...	9%	11%	9%	10%	12%	11%	12%
Canada	...	...	...	17%	16%	16%	16%	16%	16%	16%

Table 13: Percent in Community/Home Care by Province

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Atlantic	...	...	...	7%	7%	7%	8%	9%	7%	9%
Quebec/Ontario	...	...	...	8%	8%	8%	9%	9%	9%	10%
Manitoba	...	...	...	8%	8%	9%	9%	10%	11%	11%
Saskatchewan	...	...	...	**8%**	**8%**	**11%**	**11%**	**12%**	**13%**	**14%**
Alberta	...	...	...	7%	7%	8%	9%	10%	11%	11%
British Columbia	...	...	...	5%	7%	7%	8%	10%	10%	10%
North	...	...	...	15%	26%	26%	25%	29%	27%	30%
Canada	...	...	...	8%	8%	8%	9%	10%	9%	10%

... data not available from publication

Table 14: Number Reporting Multiple Employers

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Single Employer								4,057	3,837	3,732
Hospital	...	...	...	...	...	...	...	970	893	865
Nursing Home	...	...	...	...	...	...	...	2,006	1,896	1,943
Other	...	...	...	...	...	...	...	7,033	6,626	6,540
Total										
Multiple Employers								621	788	846
Hospital	...	...	...	...	...	...	...	302	360	378
Nursing Home	...	...	...	...	...	...	...	552	614	674
Other	...	...	...	...	...	...	...	1,475	1,762	1,898
Total	...	...	...	...	...	...	...			
Percent Multiple								13%	17%	18%
Hospital	...	...	...	...	...	...	...	24%	29%	30%
Nursing Home	...	...	...	...	...	...	...	22%	24%	26%
Other	...	...	...	...	...	...	...	17%	21%	22%
Total	...	...	...	...	...	...	...			

Table 15: Percent Reporting Multiple Employers by Province

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
								3%	6%	9%
Atlantic*	...	...	...	...	...	...	...	10%	13%	15%
Quebec/Ontario	...	...	...	...	...	...	...	14%	16%	15%
Manitoba	...	...	...	...	...	...	...	17%	21%	22%
Saskatchewan	...	...	...	...	...	...	...	12%	14%	17%
Alberta	...	...	...	...	...	...	...	12%		19%
British Columbia	...	...	...	...	...	...	...	13%	14%	14%
North	...	...	...	...	...	...	...	11%	13%	16%
Canada	...	...	...	...	...	...	...			

* *only Nfld in 1996, only Nfld and N S in 1997 and 1998*

data not available from publication

Table 16: Graduation Data (1994 only)

Graduated from:	Province of Registration: Canada	Atlantic	Que	Ont	Man	Sask	Alta	BC	North
Atlantic	27,716	22,262	581	2,652	133	77	895	1,009	107
Que	64,521	544	59,755	2,989	63	33	425	688	24
Ont	89,377	760	918	81,557	469	296	1,952	3,247	178
Man	12,492	83	55	892	8,486	458	1,056	1,394	68
Sask	11,727	54	51	486	332	7,253	2,059	1,417	75
Alta	18,981	103	45	601	117	520	14,847	2,622	126
BC	17,005	80	36	461	75	94	573	15,613	73
Foreign	17,939	610	1,967	11,261	657	311	2,460	584	89
Not stated	5,174	215	685	38	2	5	1	4,172	56
Total	264,932	24,711	64,093	100,937	10,334	9,047	24,268	30,746	796
Percent foreign workers		2%	3%	11%	6%	3%	10%	2%	11%
Ratio of employment to grads		80%	99%	113%	83%	77%	128%	181%	
Net flows to (from) Saskatchewan		(23)	(18)	(190)	126	...	(1,539)	(1,323)	(311)

Appendix 4
Data from the LPN Database

Licensed Practical Nurses

These data are derived from the annual licensing/renewal forms of the Saskatchewan Association of Licensed Practical Nursing (SALPA). Data entry for 1998 is incomplete so there are a large number of records with missing values for type of employment and type of employer.

Notes:

1. *Most of the data are derived from check boxes on the registration form so precise definitions for the terms are not possible. In effect, these are self-identified variables.*

Table 1: Basic Counts by Age Group and Employment Status

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998*
Total registrations	2,580	2,550	2,483	2,413	2,312	2,186	2,074	2,039	1,998	1,860
Total reporting										
Under 25	141	124	124	106	104	79	54	56	63	44
25 to 34	846	728	651	586	490	425	366	349	291	221
35 to 44	943	999	971	940	891	839	803	767	725	631
45 to 54	465	508	538	594	635	659	654	658	679	692
55 plus	168	178	188	176	181	174	184	195	229	262
Total reporting	2,563	2,537	2,472	2,402	2,301	2,176	2,061	2,025	1,987	1,850
Employed on a regular basis in Nursing										
Under 25	56	43	37	22	24	19	14	15	21	7
25 to 34	446	422	369	348	268	232	192	191	146	34
35 to 44	474	549	580	580	535	499	525	505	493	195
45 to 54	256	326	353	384	409	424	446	461	460	259
55 plus	105	116	132	124	121	118	128	134	166	105
Total reporting	1,337	1,456	1,471	1,458	1,357	1,292	1,305	1,306	1,286	600
Employed on a casual basis in Nursing										
Under 25	66	63	65	58	54	43	32	27	26	4
25 to 34	234	194	182	160	133	119	123	104	90	15
35 to 44	289	275	249	218	236	218	206	197	178	45
45 to 54	105	97	118	128	149	157	147	150	160	60
55 plus	29	27	30	24	31	39	42	45	50	38
Total reporting	723	656	644	588	603	576	550	523	504	162
Employed on regular or casual basis in Nursing										
Under 25	122	106	102	80	78	62	46	42	47	11
25 to 34	680	616	551	508	401	351	315	295	236	49
35 to 44	763	824	829	798	771	717	731	702	671	240
45 to 54	361	423	471	512	558	581	593	611	620	319
55 plus	134	143	162	148	152	157	170	179	216	143
Total reporting	2,060	2,112	2,115	2,046	1,960	1,868	1,855	1,829	1,790	762
Not employed in Nursing	12	6	3	9	10	12	7	2		
Not employed at all			1	1	3		2			
Not stated	495	424	355	348	331	300	200	197	198	1095

* preliminary

Table 2: Distribution by Age Group and Employment Status

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998*
Age Group										
Under 25	4%	3%	3%	2%	2%	1%	1%	1%	2%	1%
25 to 34	33%	29%	25%	24%	20%	18%	15%	15%	11%	6%
35 to 44	35%	38%	39%	40%	39%	39%	40%	39%	38%	33%
45 to 54	19%	22%	24%	26%	30%	33%	34%	35%	36%	43%
55 plus	8%	8%	9%	9%	9%	9%	10%	10%	13%	18%
Total reporting	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Employed on a regular basis in Nursing										
Under 25	4%	3%	3%	2%	2%	1%	1%	1%	2%	1%
25 to 34	33%	29%	25%	24%	20%	18%	15%	15%	11%	6%
35 to 44	35%	38%	39%	40%	39%	39%	40%	39%	38%	33%
45 to 54	19%	22%	24%	26%	30%	33%	34%	35%	36%	43%
55 plus	8%	8%	9%	9%	9%	9%	10%	10%	13%	18%
Total reporting	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Employed on a casual basis in Nursing										
Under 25	9%	10%	10%	10%	9%	7%	6%	5%	5%	2%
25 to 34	32%	30%	28%	27%	22%	21%	22%	20%	18%	9%
35 to 44	40%	42%	39%	37%	39%	38%	37%	38%	35%	28%
45 to 54	15%	15%	18%	22%	25%	27%	27%	29%	32%	37%
55 plus	4%	4%	5%	4%	5%	7%	8%	9%	10%	23%
Total reporting	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Employed on regular or casual basis in Nursing										
Under 25	6%	5%	5%	4%	4%	3%	2%	2%	3%	1%
25 to 34	33%	29%	26%	25%	20%	19%	17%	16%	13%	6%
35 to 44	37%	39%	39%	39%	39%	38%	39%	38%	37%	31%
45 to 54	18%	20%	22%	25%	28%	31%	32%	33%	35%	42%
55 plus	7%	7%	8%	7%	8%	8%	9%	10%	12%	19%
Total reporting	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

* preliminary

Table 3: Employment Rates by Age Group and Employment Status

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998*
Percent employed on a regular basis in Nursing										
Under 25	46%	41%	36%	28%	31%	30%	30%	36%	45%	64%
25 to 34	65%	68%	67%	68%	66%	66%	61%	65%	62%	69%
35 to 44	62%	66%	70%	72%	69%	69%	72%	72%	73%	81%
45 to 54	71%	77%	75%	75%	73%	73%	75%	75%	74%	81%
55 plus	78%	81%	81%	84%	79%	75%	75%	75%	77%	73%
Total reporting	65%	69%	69%	71%	69%	69%	70%	71%	72%	79%
Percent employed on a casual basis in Nursing										
Under 25	54%	59%	64%	73%	69%	67%	70%	64%	55%	36%
25 to 34	34%	31%	33%	31%	33%	34%	39%	35%	38%	31%
35 to 44	38%	33%	30%	27%	30%	30%	28%	28%	27%	19%
45 to 54	29%	23%	25%	25%	27%	27%	25%	25%	26%	19%
55 plus	22%	19%	19%	16%	20%	25%	25%	25%	23%	27%
Total reporting	35%	31%	30%	29%	31%	31%	30%	29%	28%	21%
Percent employed in Nursing	99%	100%	100%	100%	99%	99%	100%	100%	100%	100%
Not Employed in Nursing or at all	1%	0%	0%	0%	1%	1%	0%	0%	0%	0%

** preliminary*

Table 4: Type of Employer

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998*
All Employers										
Regular	1,341	1,459	1,477	1,463	1,361	1,294	1,311	1,314	1,293	603
Casual	732	661	647	592	607	580	554	526	507	162
Not stated, other	507	430	359	358	344	312	209	199	198	1,095
Acute, general hospitals										
Regular	806	852	866	843	731	664	691	694	698	342
Casual	451	392	367	319	312	298	294	273	284	93
Not stated, other	5	5	2	10	6	3	5	1	0	0
Rural Hospitals										
Regular	198	224	233	229	187	188	192	201	198	105
Casual	116	108	96	89	74	69	56	53	54	31
Not stated, other	5	3	0	1	0	1	0	0	0	0
Extended care, nursing homes psychiatric, rehabilitation hospitals										
Regular	254	289	291	299	297	307	285	281	261	101
Casual	130	130	146	140	150	144	136	124	105	13
Not stated, other	4	2	4	3	6	4	0	0	0	0
Community health, home care										
Regular	30	38	39	39	37	64	69	76	70	24
Casual	22	20	25	35	46	48	46	50	44	19
Not stated, other	6	5	4	5	0	2	2	1	0	0
All Others										
Regular	53	56	48	53	109	71	74	62	66	31
Casual	13	11	13	9	25	21	22	26	20	6
Not stated, other	2	2	0	1	1	2	2	0	0	0
Not stated										
Not stated, other	485	413	349	338	331	300	200	197	198	1,095
Percent of all valid responses:										
Acute, general hospitals	60%	58%	58%	56%	53%	51%	53%	53%	55%	57%
Rural Hospitals	15%	16%	15%	15%	13%	14%	13%	14%	14%	18%
Extended care, nursing homes psychiatric, rehabilitation	19%	20%	21%	21%	23%	24%	22%	22%	20%	15%
Community health, home care	3%	3%	3%	4%	4%	6%	6%	7%	6%	6%
All Others	3%	3%	3%	3%	7%	5%	5%	5%	5%	5%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

* preliminary

Table 5: Education Received by Age Group

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998*
Institute Program										
Under 25	135	121	111	91	86	60	43	50	57	40
25 to 34	764	662	606	543	460	399	336	324	265	204
35 to 44	731	784	754	728	692	663	646	637	614	548
45 to 54	293	328	359	405	437	464	471	479	512	532
55 plus	94	102	114	107	115	113	120	124	134	157
Total reporting	2,017	1,997	1,944	1,874	1,790	1,699	1,616	1,614	1,582	1,481
RN/RPNs										
Under 25	0	0	1	3	7	11	5	2	3	2
25 to 34	3	5	3	3	5	8	13	8	10	4
35 to 44	49	43	42	42	39	29	23	15	12	9
45 to 54	45	46	42	54	56	52	48	52	51	43
55 plus	19	23	23	20	20	22	20	21	27	31
Total reporting	116	117	111	122	127	122	109	98	103	89
Other										
Under 25	5	2	11	12	11	8	6	4	3	2
25 to 34	64	47	32	34	22	16	16	15	14	12
35 to 44	147	154	158	153	143	132	120	102	89	64
45 to 54	116	123	122	121	125	124	116	110	97	103
55 plus	46	45	45	45	43	35	41	46	61	65
Total reporting	378	371	368	365	344	315	299	277	264	246
Not Stated										
Under 25	1	1	1	0	0	0	0	0	0	0
25 to 34	15	14	10	6	3	2	1	2	2	1
35 to 44	16	18	17	17	17	15	14	13	10	10
45 to 54	11	11	15	14	17	19	19	17	19	14
55 plus	9	8	6	4	3	4	3	4	7	9
Total reporting	52	52	49	41	40	40	37	36	38	34
Percent of valid responses:										
Institute	80%	80%	80%	79%	79%	80%	80%	81%	81%	82%
RN/RPNs	5%	5%	5%	5%	6%	6%	5%	5%	5%	5%
Other	15%	15%	15%	15%	15%	15%	15%	14%	14%	14%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

* *preliminary*

Table 6: Area of Responsibility

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998*
Regular Basis Only										
Medical/surgical	466	500	475	447	400	360	344	334	345	149
Maternity/paediatric	159	148	148	148	133	115	109	100	93	43
Geriatric	265	301	303	295	265	271	240	234	221	82
Psychiatric	11	10	16	16	18	17	19	26	24	11
Community	44	57	55	62	59	54	56	58	60	23
Rural hospital various	269	297	324	323	309	278	302	308	315	168
Urban hospital various	21	32	34	42	45	47	61	73	68	40
Other	106	114	122	130	132	152	180	181	167	87
Total	1,341	1,459	1,477	1,463	1,361	1,294	1,311	1,314	1,293	603
Regular and Casual										
Medical/surgical	737	713	666	620	571	523	497	466	481	182
Maternity/paediatric	226	206	204	192	177	151	139	125	127	55
Geriatric	400	439	454	440	410	400	354	345	306	94
Psychiatric	14	12	19	22	27	22	24	32	27	11
Community	57	71	73	81	75	70	72	85	80	32
Rural hospital various	435	450	459	448	436	396	415	404	412	214
Urban hospital various	64	74	88	91	92	99	117	135	138	66
Other	162	172	171	181	193	225	256	250	229	111
Total	2,095	2,137	2,134	2,075	1,981	1,886	1,874	1,842	1,800	765
Percent Casual										
Medical/surgical	37%	30%	29%	28%	30%	31%	31%	28%	28%	18%
Maternity/paediatric	30%	28%	27%	23%	25%	24%	22%	20%	27%	22%
Geriatric	34%	31%	33%	33%	35%	32%	32%	32%	28%	13%
Psychiatric	21%	17%	16%	27%	33%	23%	21%	19%	11%	0%
Community	23%	20%	25%	23%	21%	23%	22%	32%	25%	28%
Rural hospital various	38%	34%	29%	28%	29%	30%	27%	24%	24%	21%
Urban hospital various	67%	57%	61%	54%	51%	53%	48%	46%	51%	39%
Other	35%	34%	29%	28%	32%	32%	30%	28%	27%	22%
Total	36%	32%	31%	29%	31%	31%	30%	29%	28%	21%

* *preliminary*

Table 7: Number by Health District

Health District	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998*
Assiniboine Valley	36	40	39	39	38	38	39	37	39	37
Central Plains	57	56	56	60	57	53	52	47	48	40
East Central	90	93	98	97	102	100	94	92	92	89
Gabriel Springs	62	52	42	28	18	18	17	17	14	14
Greenhead	24	25	26	28	28	27	24	27	26	24
Living Sky	33	35	35	39	39	37	37	30	29	29
Lloydminster	28	33	35	33	34	33	33	35	32	31
Midwest	106	95	80	64	50	48	46	50	47	46
Moose Jaw-Thunder Creek	135	132	127	136	131	121	110	115	103	91
Moose Mountain	25	24	24	25	25	21	20	22	21	18
North-East	29	32	32	31	32	31	33	29	29	30
North Central	34	35	37	36	35	32	31	26	25	24
North Valley	53	57	51	46	41	41	36	34	34	32
Northwest	23	23	24	25	24	24	23	27	27	25
Parkland	50	50	51	49	49	48	46	39	41	39
Pasquia	43	43	42	43	43	42	41	44	44	39
Pipestone	33	35	36	38	37	37	38	37	37	34
Prairie West	30	31	33	33	31	29	29	33	36	30
Prince Albert	214	187	163	142	123	115	109	112	104	98
Regina	456	459	460	455	436	421	418	420	428	395
Rolling Hills	24	26	27	28	26	24	22	21	21	19
Saskatoon	468	463	441	431	423	403	371	358	340	323
South Central	36	36	38	38	35	33	31	29	30	28
South Country	28	29	29	29	29	27	25	25	25	24
Southeast	58	63	67	66	67	66	65	62	59	54
Southwest	24	25	23	23	23	20	19	17	16	14
Swift Current	65	68	71	74	74	68	65	67	62	58
The Battlefords	76	79	78	79	76	74	70	65	65	61
Touchwood Qu'Qppelle	28	28	30	31	30	31	25	22	22	22
Twin Rivers	104	89	81	60	51	45	44	40	41	37
Northern Health Services	12	12	12	14	13	11	11	11	16	16
In province total	2,484	2,455	2,388	2,320	2,220	2,118	2,024	1,990	1,953	1,821
Out-of-Province	89	87	87	86	85	59	43	43	35	27
Total	2,573	2,542	2,475	2,406	2,305	2,177	2,067	2,033	1,988	1,848

* *preliminary*

Appendix 5
Data from SIAST/NEPS and the School of Nursing

Education Data

Sources: SIAST/University Studies Group/Saskatchewan Post Secondary Education and Skill Training

Notes:

1. *There are two data sources for the education data. The enrollment and graduation numbers for the degree program for the 1989 to 1998 period are from the University Studies Group at the University of Saskatchewan. They are based on data from the Registrar's office. The enrollment and graduation data for the SIAST diploma nursing program, the RPN, and the LPN program are from SIAST records. They were compiled by the Planning, Research and Development Division.*

2. *The graduate follow-up surveys are based on published reports from SIAST.*

3. *Note that some data are published on a calendar year basis and other data are based on the school year.*

Table 1: Capacity, Applications, Enrollments, and Graduations, Diploma Programs

	school year											
	1987-88	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99
Diploma Nursing 1												
Wascana Campus												
Capacity (funded seats)	150	150	150	150	140	120	100	80	60	...	...	...
Applications	507	378	482	544	457	306	154	155	27	...	10	...
Enrollment	183	173	175	169	155	131	112	93	85	...	...	...
Graduations (Diploma Nursing 2)	114	138	137	141	145	150	128	100	89	100	28	...
Kelsey Campus												
Capacity (funded seats)	150	150	150	150	130	130	100	80	60	16	24	...
Applications	561	395	442	567	706	564	449	179	175	3	24	...
Enrollment	148	148	140	165	161	131	109	86	84	14	...	...
Graduations (Diploma Nursing 2)	187	164	152	171	164	140	133	97	70	67	22	...
Psychiatric Nursing 1												
Wascana Campus												
Capacity (funded seats)	110	110	110	110	80	72	72	72	72	...	...	...
Applications	243	135	210	162	211	157	139	140	17	...	...	...
Enrollment	103	84	111	110	84	84	79	77	71	...	...	...
Graduations (Psychiatric Nursing 2)	56	58	56	66	81	67	65	56	51	47	1	...
Total Graduations, RN/RPN	357	360	345	378	390	357	326	253	210	214	51	...
Licensed Practical Nurses, Wascana only												
Capacity (funded seats)	55	55	55	55	55	48	40	40	40	40	40	40
Applications	277	110	179	112	143	98	70	109	88	84	83	...
Enrollment	74	87	86	81	71	73	48	57	49	44	46	67
Graduations	50	57	51	56	48	61	31	27	28	59	33	32
Off campus graduates	...	...	...	...	...	...	...	...	...	...	8	32

Table 2: Degree Programs

	school year											
	1987-88	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99
School of Nursing Degree Program												
College Admisstion Quotas												
Health Sciences	80	80	80	40	80	80	80	80	80	...	...	...
Degree Program for RNs	40	40	45	45	45	45	45	200	200	200	200	200
Full and Part Time Enrollment												
Health Sciences	87	96	88	36	80	81	81	67	64	...	...	...
Degree Program for RNs	78	81	82	45	48	55	117	76	97	92	52	...
Graduations*												
Health Sciences	62	61	54	61	67	67	27	61	74	62	55	60
Degree Program for RNs	27	24	33	28	35	30	40	50	20	30	35	...
Unknown	0	2	0	2	1	0	5	4	1	0	2	...
Masters	0	4	5	5	5	2	6	2	4	13	10	..
Total graduations	89	91	92	96	108	99	78	117	99	105	102	60
Total graduates excluding Masters, and degree program for RNs	62	63	54	63	68	67	32	65	75	62	57	60
Nursing Education Program (NEPS)												
Capacity	...	...	...	...	...	...	...	...	...	180	180	180
Enrollment	...	...	...	...	...	...	...	...	...	202	185	239
Graduations	...	...	...	...	...	...	...	...	...	...	...	16**
Total graduates (degree/diploma)	**419**	**423**	**399**	**441**	**458**	**424**	**358**	**318**	**285**	**276**	**108**	**76**

* these are calendar years, i.e. 1997-98 is actually calendar year 1998

** third year exit

Table 3: SIAST Graduate Follow-up Surveys Data

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998*
Graduates (including post-basic)											
Diploma Nursing	301	302	289	302	306	290	274	224	193	167	72
Registered Psychiatric Nursing	56	58	56	66	81	67	65	56	51	47	1
Nursing Assistants	87	57	54	60	53	62	31	30	32	59	33
Respondents											
Diploma Nursing	176	173	171	195	220	174	203	159	116	99	48
Registered Psychiatric Nursing	29	31	31	41	49	45	47	36	37	28	1
Nursing Assistants	41	29	36	34	34	37	24	22	16	48	25
Employment											
Diploma Nursing	174	170	168	177	171	129	162	144	101	89	47
Registered Psychiatric Nursing	28	28	30	37	46	41	45	33	27	26	...
Nursing Assistants	36	27	32	31	30	35	21	20	14	40	25
Training Related Employment											
Diploma Nursing	173	169	168	167	149	99	129	117	88	88	41
Registered Psychiatric Nursing	27	28	30	35	43	33	41	29	18	21	...
Nursing Assistants	36	26	31	31	27	29	17	16	13	38	25
Training Related Full Time											
Diploma Nursing	117	113	72	54	41	28	63	61	37	52	35
Registered Psychiatric Nursing	21	25	17	18	18	10	21	17	5	11	...
Nursing Assistants	13	8	9	10	2	7	10	13	6	26	20
Training Related Involuntary Part Time**											
Diploma Nursing	41	36	65	104	103	59	48	46	...	...	...
Registered Psychiatric Nursing	6	2	8	15	5	21	12	9	...	...	...
Nursing Assistants	15	13	11	19	24	15	6	3	...	...	...
Training Related Out of Province											
Diploma Nursing	44	32	22	36	41	25	10	8	10	4	2
Registered Psychiatric Nursing	7	7	11	1	9	2	2	0	4	1	...
Nursing Assistants	4	5	1	4	0	2	0	0	1	0	1

* 1998 data are preliminary

** the question on involuntary part time was not asked after 1995

Table 4: SIAST Graduate Follow-up Surveys

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998*
Combined RNs/RPNs											
Response rate	57%	57%	59%	64%	70%	61%	74%	70%	63%	59%	67%
Employment											
Training related full time	67%	68%	44%	31%	22%	17%	34%	40%	27%	50%	71%
Training related voluntary PT**	7%	10%	18%	5%	9%	6%	10%	7%	42%	36%	12%
Training related involuntary PT**	23%	19%	36%	50%	40%	37%	24%	28%			
Training Related Employment	98%	97%	98%	86%	71%	60%	68%	75%	69%	86%	84%
Other employment	1%	0%	0%	5%	9%	17%	15%	16%	14%	5%	12%
Employment Total	99%	97%	98%	91%	81%	78%	83%	91%	84%	91%	96%
Training related employment outside Saskatchewan	26%	20%	17%	18%	26%	20%	7%	5%	13%	5%	5%
Licensed Practical Nurses											
Response rate	47%	51%	67%	57%	64%	60%	77%	73%	50%	81%	76%
Employment											
Training related full time	32%	28%	25%	29%	6%	19%	42%	59%	38%	54%	80%
Training related voluntary PT**	20%	17%	31%	6%	3%	19%	4%	0%	44%	25%	20%
Training related involuntary PT**	37%	45%	31%	56%	71%	41%	25%	14%			
Training Related Employment	88%	90%	86%	91%	79%	78%	71%	73%	81%	79%	100%
Other employment	0%	3%	3%	0%	9%	16%	17%	18%	6%	4%	0%
Employment Total	88%	93%	89%	91%	88%	95%	88%	91%	88%	83%	100%
Training related employment outside Saskatchewan	10%	17%	3%	12%	0%	5%	0%	0%	6%	0%	4%

* 1998 data are preliminary

** the question on involuntary part-time was not asked after 1995

October 12, 1999

ATTN: Linda Smith
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S4P 0R7

ATTN: Kelly Kummerfield
Saskatchewan Health
3475 Albert Street
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S4S 6X6

Dear Linda/Kelly;

Just so you don't have to reread the entire report, I've kept track of all of the changes to the nursing study here.

There were two suggested changes that I didn't feel comfortable making.

Pages ix/9 — The suggested changes to the executive summary and Section 2.1 would de-emphasize the drop in the number of RN/RPN graduates and explain why they occurred. A good case can be made that the drop was in fact the primary cause of the nursing "shortage" so I think that the emphasis should remain. And I'd rather not get into the reasons for the drop because there is a good deal of debate about the "why" and I'm trying to keep the focus of the study on a description of the situation rather than it's causes.

Page 44 — It has been suggested that the word "will"be changed to "may" in the sentence "The additional cost of obtaining a nursing education will have a dampening effect on applications over the long term." I feel that a definitive word is appropriate here because the immutable law of price/demand applies. There may, indeed, be offsetting factors (such as a guaranteed job) but the extra cost can only have a negative effect over the long term.

There are two other suggestions for substantive additions to the report. One is the early retirement scenario that is mentioned briefly on page 44. The other is the supplementary work I did on overall supply and demand. In both these cases, I think a separate document is more appropriate and these documents (in the form of a letter from me to you) will be available shortly; feel free to use them as you see fit.

Early retirement — I'm aware that the change in the early retirement provision will have an immediate negative effect on retention, but I'm still unhappy assuming that the full 7.5% will take up the option immediately or over the longer term. Without a lot of additional research, I don't know of an easy way to develop a more realistic scenario. The separate letter will describe a kind of worst case scenario for the impact of changes in the retirement date.

Supply/demand — As you know, I've calculated the supply in the report excluding new entrants, i.e. graduates. The difficulty I have with including the supply/demand scenario is that virtually all of the numbers are assumptions and some of them are problematic. Besides having to forecast the number of new graduates who stay to practise nursing in Saskatchewan, we've had to use a really restrictive definition of supply (especially for LPNs and RPNs). Basically I think the numbers are just too soft to include in the report.

The following are a list of changes that have been made to the report.

General — The date has been changed from August to October.

Appendix 6 — Kate Azure from Sask Health discovered that in calculating vacancy rates, I divided the number of vacancies by employment whereas I should have divided vacancies by positions. This has only a marginal effect overall, dropping the nursing vacancy rate from 3.4% to 3.3% in 1998, but it does lower the rate in some districts by a few tenths of a percentage point. And it removes Saskatoon from the map showing vacancy rates 2.0% or higher because the rate falls from 2.0% to 1.9%.

There are a number of minor changes in pages 80 to 82 that result from this and Appendix 6 has been revised. At the same time, I stopped subtotalling LPNs and student nurses in Appendix 6 because it could cause some consternation among LPNs. They are now listed separately throughout the appendix.

Table 2.1 — There has been yet another revision to this table. The graduates columns have been shifted "back" one year; for example, there are now 318 graduates in 1994-95 rather than in 1995-96. (The problem is one of school years vs. calendar years and discrepancies among the data sources.) This effectively moves the smallest number of graduates to last year rather than this year. Table 2.1 now agrees with Appendix 3 and Figure 2.2.

Typos etc.
- P27 — the data is now "out-of-date" rather than just "of-date" in point #1
- P29 — wording in the second paragraph has been fixed
- P19 — the missing lines are now included
- P81 — the missing lines are now included

Wording, etc.
- ix — reference to the fast track graduates has been added to point #7
- P2 — add employers/health boards to those involved in the labour unrest
- P9 — change references to fast track graduates
- P9 — the reference to the "approval in principle" was changed in the second paragraph
- P9 — change wording of last sentence in third paragraph
- P15 — the last sentence indicates a need "to adjust the numbers", a process that actually occurs in the following paragraphs and I've made that clearer
- P45 — I've clarified that the "additional education" is only a re-entry course.
- P77 — took out the word "uniformly" with regard to age and the growth of health services

I think I've managed to deal with all of the issues raised in letters and emails and at the meeting on October 4th.

Yours truly,

Douglas H. Elliott
QED Information Systems

attach. letter re: early retirement scenario
letter re: overall supply and demand
revised Appendix 6 - 4 copies to Health, 6 to PSEST
revised report - 4 copies to Health, 6 to PSEST

Appendix 6
Data from the Health Employers Survey

Health Employers Survey

Source: Saskatchewan Health

Notes:

1. *These data are based on a survey so the actual counts in these tables are not as important as the ratios because the counts are affected by response rates.*
2. *The survey includes both the public and private sectors.*
3. *Double counting from multiple job holders is possible, especially if the jobs are for different employers.*
4. *Vacancy and turnover rates include both full-time and part-time positions and are weighted equally. A vacancy is an unfilled position at the time of the survey and is, therefore, an instantaneous measure. A "turnover", on the other hand, occurs when the person in the position changes over the course of the calendar year in which the survey was conducted. The vacancy rate is the number of full time and part time vacancies divided by the number of full and part time positions.*
5. *1998 figures are preliminary.*

Table 1: Employment (Full and Part Time) by Detailed Job Class

	1990	1991	1992	1993	1994	1995	1996	1997	1998
Nursing Positions									
Administration	719	616	602	674	692	619	625	565	...
Education	226	245	211	218	177	218	168	206	...
Administration/Education	945	861	813	892	869	837	793	771	
General duty	4,929	4,800	4,807	4,632	4,782	4,517	4,409	3,995	4,477
Critical Care	597	579	620	605	576	628	619	523	776
Dialysis	37	37	42	50	47	53	51	60	70
Emergency Room	239	224	257	241	230	244	240	195	278
Operating Room	257	260	242	257	282	251	249	155	224
Specialties	1,130	1,100	1,161	1,153	1,135	1,176	1,159	933	1,348
Occupational Health	...	...	...	...	19	62	62	43	58
Primary Care	...	...	...	...	...	...	92	85	50
Public Health	406	369	397	349	296	406	377	282	393
Primary/Public	406	369	397	349	315	468	531	410	501
LPN	1,740	1,685	1,614	1,266	1,229	1,210	1,222	1,023	1,297
Student/Not Registered	120	72	59	20	8	28	19	31	13
RPN	501	623	653	662	669	658	719	559	683
RPN, Administration, teaching	118	128	108	120	124	96	101	63	...
RPNs	619	751	761	782	793	754	820	622	683
Nursing subtotal	9,889	9,638	9,612	9,094	9,131	8,990	8,953	7,785	8,319
All health occupations	15,163	15,571	15,348	21,472	22,090	21,786	22,162	19,542	...
Position Summary									
Administration/Education	945	861	813	892	869	837	793	771	...
General duty	4,929	4,800	4,807	4,632	4,782	4,517	4,409	3,995	4,477
Specialties	1,130	1,100	1,161	1,153	1,135	1,176	1,159	933	1,348
Primary/Public	406	369	397	349	315	468	531	410	501
LPNs	1,740	1,685	1,614	1,266	1,229	1,210	1,222	1,023	1,297
Not registered	120	72	59	20	8	28	19	31	13
RPNs	619	751	761	782	793	754	820	622	683
Nursing subtotal	9,889	9,638	9,612	9,094	9,131	8,990	8,953	7,785	8,319
All health occupations	15,163	15,571	15,348	21,472	22,090	21,786	22,162	19,542	...

Table 2: Full Time Employment by Detailed Job Class

	1990	1991	1992	1993	1994	1995	1996	1997	1998
Nursing Positions									
Administration	584	477	464	518	519	497	503	462	...
Education	155	144	151	134	136	163	122	126	...
Administration/Education	739	621	615	652	655	660	625	588	
General duty	2,271	2,200	2,130	2,109	2,086	1,984	1,853	1,759	2,065
Critical Care	384	368	404	364	354	392	394	315	442
Dialysis	15	13	18	21	21	25	23	25	34
Emergency Room	127	117	138	117	117	124	122	101	139
Operating Room	155	160	157	164	175	157	146	89	131
Specialties	681	658	717	666	667	698	685	530	746
Occupational Health	...	...	...	...	15	41	39	28	32
Primary Care	...	...	...	...	...	...	29	70	42
Public Health	309	282	285	257	224	243	252	196	242
Primary/Public	309	282	285	257	239	284	320	294	316
LPN	949	875	873	690	644	609	607	488	623
Student/Not Registered	37	34	14	9	5	9	10	21	1
RPN	389	472	507	504	510	504	537	423	510
RPN, Administration, teaching	110	120	103	114	109	81	81	60	...
RPNs	499	592	610	618	619	585	618	483	510
Nursing subtotal	5,485	5,262	5,244	5,001	4,915	4,829	4,718	4,163	4,261
All health occupations	8,813	8,902	8,772	11,683	11,881	11,665	11,523	10,757	...
Position Summary									
Administration/Education	739	621	615	652	655	660	625	588	0
General duty	2,271	2,200	2,130	2,109	2,086	1,984	1,853	1,759	2,065
Specialties	681	658	717	666	667	698	685	530	746
Primary/Public	309	282	285	257	239	284	320	294	316
LPN	949	875	873	690	644	609	607	488	623
Not Registered	37	34	14	9	5	9	10	21	1
RPNs	499	592	610	618	619	585	618	483	510
Nursing subtotal	5,485	5,262	5,244	5,001	4,915	4,829	4,718	4,163	4,261
All health occupations	8,813	8,902	8,772	11,683	11,881	11,665	11,523	10,757	...

Table 3: Employment by Type of Employment

	1990	1991	1992	1993	1994	1995	1996	1997	1998
Full Time									
Administration/Education	739	621	615	652	655	660	625	588	...
General duty	2,271	2,200	2,130	2,109	2,086	1,984	1,853	1,759	2,065
Specialties	681	658	717	666	667	698	685	530	746
Primary/Public	309	282	285	257	239	284	320	294	316
LPNs	949	875	873	690	644	609	607	488	623
Not Registered	37	34	14	9	5	9	10	21	1
RPNs	499	592	610	618	619	585	618	483	510
Nursing subtotal	5,485	5,262	5,244	5,001	4,915	4,829	4,718	4,163	4,261
All health occupations	8,813	8,902	8,772	11,683	11,881	11,665	11,523	10,757	...
Part Time									
Administration/Education	206	240	198	240	214	177	168	183	...
General duty	2,658	2,600	2,677	2,523	2,696	2,533	2,556	2,236	2,412
Specialties	449	442	444	487	468	478	474	403	602
Primary/Public	97	87	112	92	76	184	211	116	185
LPNs	791	810	741	576	585	601	615	535	674
Not Registered	83	38	45	11	3	19	9	10	12
RPNs	120	159	151	164	174	169	202	139	173
Nursing subtotal	4,404	4,376	4,368	4,093	4,216	4,161	4,235	3,622	4,058
All health occupations	6,350	6,669	6,576	9,789	10,209	10,121	10,639	8,785	...
Casual									
Administration/Education	...	...	...	...	...	...	...	84	...
General duty	...	...	...	...	...	...	...	2,430	2,129
Specialties	...	...	...	...	...	...	...	396	415
Primary/Public	...	...	...	...	...	...	...	81	80
LPNs	...	...	...	...	...	...	...	583	526
Not Registered								8	8
RPNs	...	...	...	...	...	...	...	156	162
Nursing subtotal	...	...	...	...	...	...	...	3,738	3,320
All health occupations	...	...	...	...	...	...	...	7,293	...

Table 4: Employment by Type of Employment

	1990	1991	1992	1993	1994	1995	1996	1997	1998
Percent Full Time									
Administration/Education	78%	72%	76%	73%	75%	79%	79%	76%	...
General duty	46%	46%	44%	46%	44%	44%	42%	44%	46%
Specialties	60%	60%	62%	58%	59%	59%	59%	57%	55%
Primary/Public	76%	76%	72%	74%	76%	61%	60%	72%	63%
LPNs	55%	52%	54%	55%	52%	50%	50%	48%	48%
Not Registered	31%	47%	24%	45%	63%	32%	53%	68%	8%
RPNs	81%	79%	80%	79%	78%	78%	75%	78%	75%
Nursing subtotal	55%	55%	55%	55%	54%	54%	53%	53%	51%
All health occupations	58%	57%	57%	54%	54%	54%	52%	55%	...
Percent Part Time									
Administration/Education	22%	28%	24%	27%	25%	21%	21%	24%	...
General duty	54%	54%	56%	54%	56%	56%	58%	56%	54%
Specialties	40%	40%	38%	42%	41%	41%	41%	43%	45%
Primary/Public	24%	24%	28%	26%	24%	39%	40%	28%	37%
LPNs	45%	48%	46%	45%	48%	50%	50%	52%	52%
Not Registered	69%	53%	76%	55%	38%	68%	47%	32%	92%
RPNs	19%	21%	20%	21%	22%	22%	25%	22%	25%
Nursing subtotal	45%	45%	45%	45%	46%	46%	47%	47%	49%
All health occupations	42%	43%	43%	46%	46%	46%	48%	45%	...

Table 5: Vacancies and Vacancy Rates by Job Category

	1990	1991	1992	1993	1994	1995	1996	1997	1998
Vacancies									
Administration/Education	10	4	6	14	6	8	5	12	...
General duty	101	85	29	49	25	68	36	26	174
Specialties	9	8	9	4	4	11	3	1	39
Primary/Public	14	8	6	15	7	17	22	13	18
LPNs	9	4	4	4	12	16	15	9	31
Not Registered	1	0	1	0	0	1	1	0	0
RPNs	27	19	21	26	13	19	10	10	20
Nursing subtotal	171	128	76	112	67	140	92	71	282
All health occupations	409	283	225	282	291	391	286	224	...
Vacancy Rates									
Administration/Education	1.0%	0.5%	0.7%	1.5%	0.7%	0.9%	0.6%	1.5%	...
General duty	2.0%	1.7%	0.6%	1.0%	0.5%	1.5%	0.8%	0.6%	3.7%
Specialties	0.8%	0.7%	0.8%	0.3%	0.4%	0.9%	0.3%	0.1%	2.8%
Primary/Public	3.3%	2.1%	1.5%	4.1%	2.2%	3.5%	4.0%	3.1%	3.5%
LPNs	0.5%	0.2%	0.2%	0.3%	1.0%	1.3%	1.2%	0.9%	2.3%
Not Registered	0.8%	0.0%	1.7%	0.0%	0.0%	3.4%	5.0%	0.0%	0.0%
RPNs	4.2%	2.5%	2.7%	3.2%	1.6%	2.5%	1.2%	1.6%	2.8%
Nursing subtotal	1.7%	1.3%	0.8%	1.2%	0.7%	1.5%	1.0%	0.9%	3.3%
Full time only, Nursing positions	1.6%	1.2%	1.0%	1.5%	0.7%	1.2%	0.8%	0.8%	2.9%
Part time only, Nursing positions	1.8%	1.5%	0.5%	0.9%	0.8%	1.9%	1.3%	1.0%	3.7%
All health occupations	2.6%	1.8%	1.4%	1.3%	1.3%	1.8%	1.3%	1.1%	...

Table 6: Turnovers and Turnover Rates by Job Category

	1990	1991	1992	1993	1994	1995	1996	1997	1998
Turnovers									
Administration/Education	60	46	42	49	85	65	40	54	.
General duty	470	343	213	253	300	214	152	269	299
Specialties	52	45	21	13	24	19	18	15	12
Primary/Public	44	14	28	30	20	48	48	19	37
LPNs	134	65	53	62	59	42	39	65	34
Not Registered	2	6	3	0	0	1	4	0	1
RPNs	49	61	35	27	32	17	33	36	33
Nursing subtotal	811	580	395	434	520	406	334	458	416
All health occupations	1,297	1,102	760	1,230	1,357	1,091	1,027	1,335	...
Turnover Rates									
Administration/Education	6.3%	5.3%	5.2%	5.5%	9.8%	7.8%	5.0%	7.0%	...
General duty	9.5%	7.1%	4.4%	5.5%	6.3%	4.7%	3.4%	6.7%	6.7%
Specialties	4.6%	4.1%	1.8%	1.1%	2.1%	1.6%	1.6%	1.6%	0.9%
Primary/Public	10.8%	3.8%	7.1%	8.6%	6.3%	10.3%	9.0%	4.6%	7.4%
LPNs	7.7%	3.9%	3.3%	4.9%	4.8%	3.5%	3.2%	6.4%	2.6%
Not Registered	1.7%	8.3%	5.1%	0.0%	0.0%	3.6%	21.1%	0.0%	7.7%
RPNs	7.9%	8.1%	4.6%	3.5%	4.0%	2.3%	4.0%	5.8%	4.8%
Nursing subtotal	8.2%	6.0%	4.1%	4.8%	5.7%	4.5%	3.7%	5.9%	5.0%
Full time only, Nursing positions	7.4%	5.9%	3.7%	4.8%	6.1%	3.4%	3.1%	5.5%	3.8%
Part time only, Nursing positions	9.2%	6.2%	4.6%	4.7%	5.2%	5.8%	4.4%	6.4%	6.2%
All health occupations	8.6%	7.1%	5.0%	5.7%	6.1%	5.0%	4.6%	6.8%	...

Table 6: Vacancy Rates by Health District, Nursing Occupations

	1991	1992	1993	1994	1995	1996	1997	1998	Five Year Average
Vacancy Rates									
Assiniboine Valley	...	...	0.0%	0.0%	0.0%	1.5%	0.0%	0.0%	0.3%
Battlefords	...	...	6.0%	3.1%	0.0%	2.3%	1.5%	0.0%	1.5%
Central Plains	...	...	2.2%	0.0%	1.3%	0.0%	0.0%	0.7%	0.5%
East Central	...	...	0.7%	0.0%	0.0%	0.0%	0.0%	5.3%	1.1%
Gabriel Springs	...	...	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Greenhead	...	...	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Living Sky	...	...	0.0%	0.0%	2.3%	0.0%	0.0%	3.2%	0.9%
Lloydminster	...	...	0.0%	0.0%	0.8%	0.0%	0.0%	0.0%	0.2%
Midwest	...	...	0.6%	0.0%	0.6%	1.9%	5.9%	0.0%	1.7%
Moose Jaw/Thunder Creek	...	...	0.9%	0.4%	0.0%	0.0%	0.2%	0.3%	0.2%
Moose Mountain	...	...	0.0%	0.0%	1.3%	0.0%	0.0%	0.0%	0.3%
North Central	...	...	0.0%	0.8%	0.0%	0.0%	2.9%	1.2%	1.0%
North Valley	...	...	0.0%	0.0%	0.0%	0.0%	0.0%	12.5%	2.7%
North-East	...	...	0.0%	0.0%	0.0%	0.9%	0.0%	2.9%	0.8%
Northwest	...	...	0.0%	0.0%	0.0%	0.0%	1.3%	1.1%	0.5%
Parkland	...	...	0.0%	0.0%	3.4%	0.0%	0.8%	0.9%	1.0%
Pasquia	...	...	0.0%	0.0%	0.7%	0.8%	0.0%	2.3%	0.8%
Pipestone	...	...	0.7%	3.2%	0.8%	1.3%	0.9%	0.0%	1.3%
Prairie West	...	...	0.0%	1.8%	0.0%	5.7%	2.4%	1.0%	2.4%
Prince Albert	...	...	0.6%	0.7%	0.6%	0.6%	1.8%	1.5%	1.0%
Regina	...	...	0.7%	0.1%	1.2%	0.7%	1.2%	7.9%	2.3%
Rolling Hills	...	...	0.0%	4.5%	9.0%	0.0%	0.0%	0.0%	3.1%
Saskatoon	...	...	1.9%	0.4%	1.2%	1.0%	0.7%	1.9%	1.0%
South Central	...	...	0.0%	0.5%	0.5%	0.0%	0.0%	0.0%	0.2%
South Country	...	...	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
South East	...	...	1.2%	0.0%	0.0%	4.0%	0.0%	0.0%	1.1%
Southwest	...	...	1.0%	1.1%	3.4%	0.0%	0.0%	2.2%	1.3%
Swift Current	...	...	0.0%	6.4%	17.5%	0.0%	0.0%	1.1%	5.8%
Touchwood Qu'Appelle	...	...	0.0%	0.0%	5.4%	1.0%	1.6%	3.3%	2.3%
Twin Rivers	...	...	2.4%	3.3%	0.0%	0.0%	0.0%	0.0%	0.7%
Northern Sask	...	...	7.2%	3.3%	6.8%	13.1%	4.5%	9.0%	7.3%
Total for Saskatchewan	...	...	1.2%	0.7%	1.5%	1.0%	0.9%	3.3%	1.5%

Table 7: Turnover Rates by Health District, Nursing Occupations

	1991	1992	1993	1994	1995	1996	1997	1998	Five Year Average
Turnover Rates									
Assiniboine Valley	...	...	2%	3%	6%	5%	1%	10%	5%
Battlefords	...	...	4%	4%	3%	4%	4%	3%	4%
Central Plains	...	...	9%	1%	4%	3%	9%	13%	5%
East Central	...	...	1%	2%	2%	3%	2%	4%	2%
Gabriel Springs	...	...	1%	4%	5%	0%	0%	13%	4%
Greenhead	...	...	24%	10%	3%	3%	14%	0%	6%
Living Sky	...	...	4%	1%	6%	7%	4%	4%	4%
Lloydminster	...	...	6%	2%	3%	2%	3%	1%	2%
Midwest	...	...	17%	4%	3%	6%	2%	7%	4%
Moose Jaw/Thunder Creek	...	...	6%	16%	5%	7%	7%	5%	8%
Moose Mountain	...	...	1%	0%	1%	3%	0%	3%	2%
North Central	...	...	12%	7%	3%	5%	0%	7%	4%
North Valley	...	...	4%	2%	3%	0%	3%	17%	5%
North-East	...	...	9%	6%	1%	1%	2%	6%	3%
Northwest	...	...	17%	13%	22%	5%	13%	15%	14%
Parkland	...	...	1%	5%	17%	9%	20%	18%	14%
Pasquia	...	...	0%	2%	2%	2%	11%	1%	4%
Pipestone	...	...	0%	8%	2%	4%	4%	6%	5%
Prairie West	...	...	2%	4%	4%	2%	7%	9%	5%
Prince Albert	...	...	5%	7%	6%	6%	34%	6%	11%
Regina	...	...	4%	5%	4%	3%	6%	5%	5%
Rolling Hills	...	...	6%	0%	11%	4%	8%	18%	8%
Saskatoon	...	...	4%	6%	4%	3%	3%	2%	4%
South Central	...	...	10%	6%	6%	5%	5%	6%	6%
South Country	...	...	0%	1%	0%	1%	0%	0%	0%
South East	...	...	2%	4%	3%	4%	0%	0%	3%
Southwest	...	...	4%	17%	14%	6%	6%	8%	10%
Swift Current	...	...	5%	4%	6%	0%	0%	5%	3%
Touchwood Qu'Appelle	...	...	17%	2%	3%	3%	6%	3%	8%
Twin Rivers	...	...	...	11%	8%	0%	0%	0%	0%
Northern Sask	...	...	13%	14%	15%	19%	8%	22%	13%
Total for Saskatchewan	...	...	4.8%	5.7%	4.5%	3.7%	5.9%	5.0%	4.9%

Table 8: Vacancies and Turnovers by Health Service Area, Nursing Occupations

	1991	1992	1993	1994	1995	1996	1997	1998	Five Year Average
Employment									
1 - Weyburn/Estevan	...	...	450	483	463	472	180	403	400
2 - Moose Jaw	...	...	620	563	529	532	498	465	517
3 - Swift Current	...	...	390	386	387	383	365	337	372
4 - Regina	...	...	2,268	2,310	2,232	2,254	1,656	2,133	2,117
5 - Yorkton	...	...	571	600	573	545	608	569	579
6 - Saskatoon	...	...	2,639	2,694	2,712	2,708	2,478	2,570	2,632
7 - Rosetown/Kindersley	...	...	381	360	389	377	361	311	360
8 - Northeast	...	...	377	341	346	337	335	315	335
9 - Prince Albert	...	...	604	572	582	569	509	510	548
10 - Battlefords	...	...	704	734	681	670	731	609	685
11 - North	...	...	90	88	96	106	64	97	90
Total	...	...	9,094	9,131	8,990	8,953	7,785	8,319	8,636
Vacancies									
1 - Weyburn/Estevan	...	...	2	1	2	8	0	0	2
2 - Moose Jaw	...	...	5	2	0	0	1	1	1
3 - Swift Current	...	...	1	20	58	0	0	4	16
4 - Regina	...	...	16	8	31	18	20	165	48
5 - Yorkton	...	...	2	0	0	2	0	36	8
6 - Saskatoon	...	...	47	9	32	24	16	49	26
7 - Rosetown/Kindersley	...	...	1	2	1	11	13	1	6
8 - Northeast	...	...	0	1	1	2	3	7	3
9 - Prince Albert	...	...	3	3	7	3	8	7	6
10 - Battlefords	...	...	28	18	1	8	7	1	7
11 - North	...	...	7	3	7	16	3	11	8
Total	...	...	112	67	140	92	71	282	130
Turnovers									
1 - Weyburn/Estevan	...	...	25	20	20	20	9	13	16
2 - Moose Jaw	...	...	32	74	20	32	30	18	35
3 - Swift Current	...	...	18	24	34	9	12	28	21
4 - Regina	...	...	76	128	79	73	98	107	97
5 - Yorkton	...	...	12	14	19	15	10	47	21
6 - Saskatoon	...	...	105	135	116	85	69	81	97
7 - Rosetown/Kindersley	...	...	52	19	13	16	23	19	18
8 - Northeast	...	...	28	16	7	9	16	13	12
9 - Prince Albert	...	...	26	37	50	37	155	43	64
10 - Battlefords	...	...	48	41	34	18	31	23	29
11 - North	...	...	12	12	14	20	5	24	15
Total	...	...	434	520	406	334	458	416	427

Table 9: Vacancy and Turnover Rates by Health Service Area, Nursing Occupations

	1991	1992	1993	1994	1995	1996	1997	1998	Five Year Average
Vacancy Rates									
1 - Weyburn/Estevan	...	...	0%	0%	0%	2%	0%	0%	0.5%
2 - Moose Jaw	...	...	1%	0%	0%	0%	0%	0%	0.2%
3 - Swift Current	...	...	0%	5%	13%	0%	0%	1%	4.4%
4 - Regina	...	...	1%	0%	1%	1%	1%	7%	2.3%
5 - Yorkton	...	...	0%	0%	0%	0%	0%	6%	1.3%
6 - Saskatoon	...	...	0%	0%	1%	1%	1%	2%	1.0%
7 - Rosetown/Kindersley	...	...	2%	1%	0%	3%	3%	0%	1.6%
8 - Northeast	...	...	0%	0%	0%	1%	1%	2%	0.8%
9 - Prince Albert	...	...	0%	0%	0%	1%	2%	1%	1.0%
10 - Battlefords	...	...	4%	2%	0%	1%	1%	0%	1.0%
11 - North	...	...	7%	3%	7%	13%	4%	10%	8.9%
Total			1.2%	0.7%	1.5%	1.0%	0.9%	3.3%	1.5%
Turnover Rates									
1 - Weyburn/Estevan	...	...	6%	4%	4%	4%	5%	3%	4%
2 - Moose Jaw	...	...	5%	13%	4%	6%	6%	4%	7%
3 - Swift Current	...	...	5%	6%	9%	2%	3%	8%	6%
4 - Regina	...	...	3%	6%	4%	3%	6%	5%	5%
5 - Yorkton	...	...	2%	2%	3%	3%	2%	8%	4%
6 - Saskatoon	...	...	4%	5%	4%	3%	3%	3%	4%
7 - Rosetown/Kindersley	...	...	14%	5%	3%	4%	6%	6%	5%
8 - Northeast	...	...	7%	5%	2%	3%	5%	4%	4%
9 - Prince Albert	...	...	4%	6%	9%	7%	30%	8%	12%
10 - Battlefords	...	...	7%	6%	5%	3%	4%	4%	4%
11 - North	...	...	13%	14%	15%	19%	8%	25%	17%
Total			4.8%	5.7%	4.5%	3.7%	5.9%	5.0%	4.9%